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SMART AMPS

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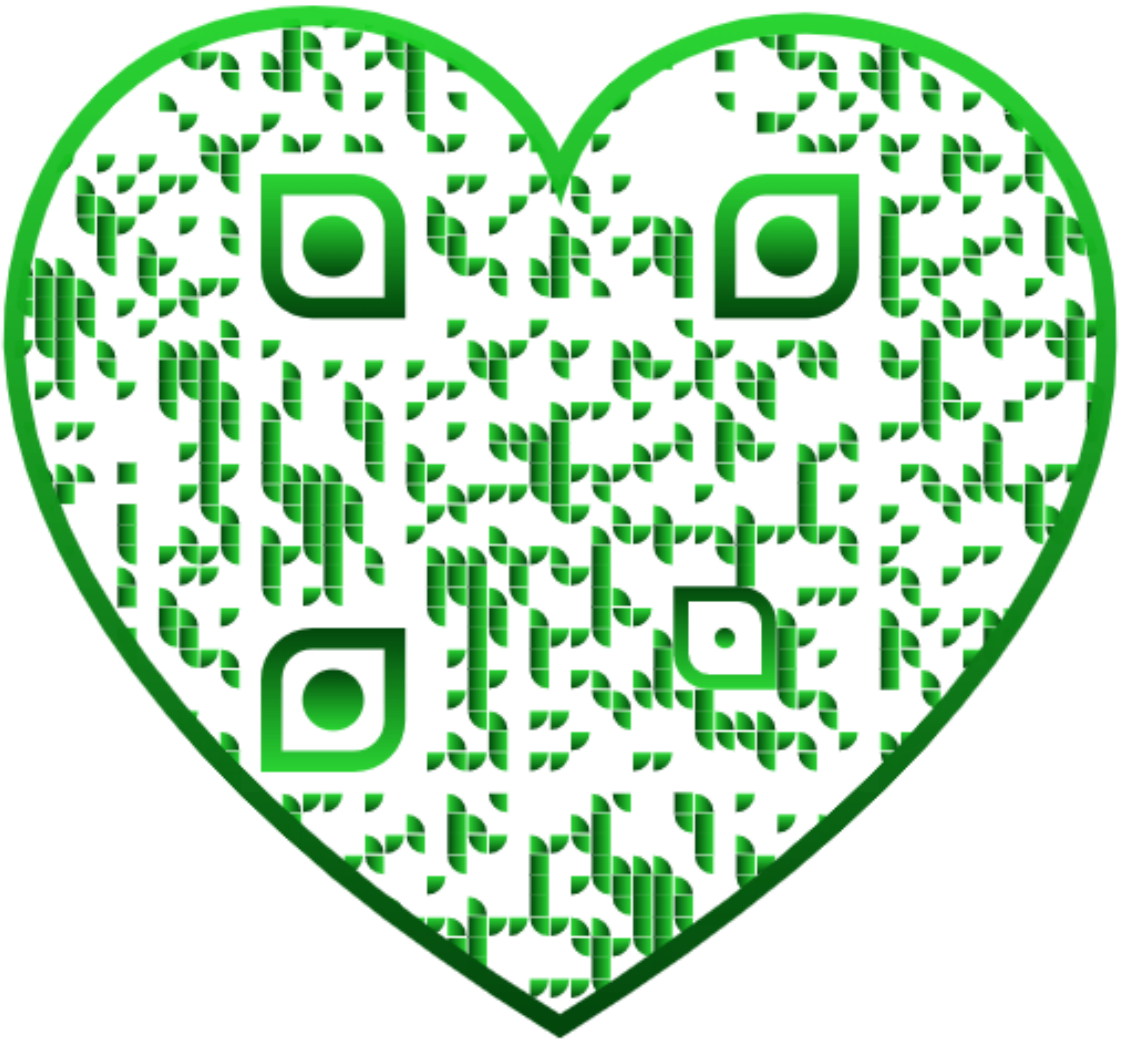

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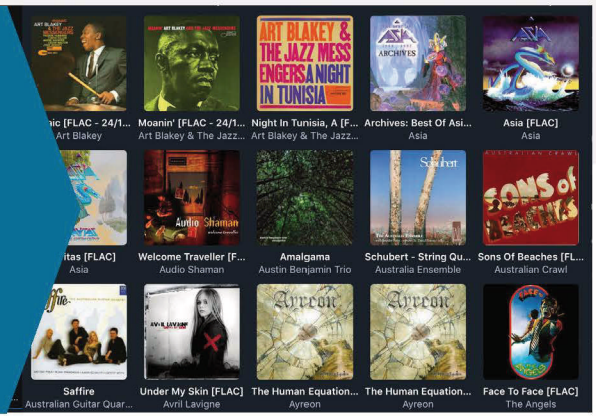

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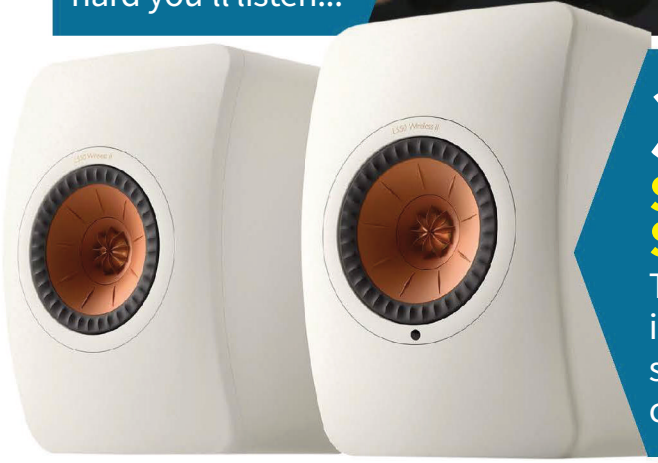

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The unbounded Australian open lifestyle...

I have a very wide room. In fact, in acoustic terms it might be considered infinitely wide, because each side is ultimately open, to the garden on one side, and on the other to a balcony which hangs over the edge of a rock drop-off. Both ends of the house remain wide open by day, and at night are closed off by insect screens, but nothing that will much constrain air flow.

There is a lovely cool flow through this room, from right side to left side — of air, I would say, though our home's previous owner, a yoga teacher, called it *chi*. So I am loth ever to pull across the brutishly heavy glass sliding doors and so sever that *chi*. It flows even during 'Antarctic blasts' (by which I mean any time Sydney drops below 20°C); only one side needs be closed even for heavy rain. In only two circumstances are all doors fully slid shut so that we have an enclosed volume of air. Firstly during extreme heat (say 33°C and above) when the flow of *chi* turns fiery; we seal in the night's cooler air and let the heat lick at the double layers of glass and insect screen.

Oh, and secondly, we close *everything* up when my singer comes round and the piano lid goes fully up; he's amplified with extravagantly excessive reverb, and sometimes also a magic box which gives him three-part harmonies in real-time, which remains quite miraculous and still gives us the giggles even after 10 years of use when applied to a swift chorus of *Sweet Talking Woman* or a heart-stopping *Hallelujah*. In these circumstances we are generating quite enough of our own *chi* inside our sealed enclosure, and indeed I am led to believe that sufficient still seeps out to keep near neighbours in touch with our set list, if not our reverb settings.

Lifestyle versus loudspeakers

I digress (as usual; sorry). There is a hi-fi angle here, and perhaps more — a realisation that Australia's open-house lifestyle may not be providing quite the conditions for which your loudspeakers were designed.

I should note that this wide and open room doesn't host my main system. But it is where we have the biggest TV, with audio which varies somewhat according to incoming review equipment but is usually based on an AV-equipped Classé stereo amplifier and a pair of decade-old German T+A standmounters.

"What countries are renowned for speaker design? Well it's Denmark, isn't it. And even with global warming I don't think that's yet a doors-open windows-open kindaplace."

On reflections

It has always been apparent that if I test a soundbar in this room, and it makes use of angled side speakers to create a surround effect, then its efforts will clearly fail. It can't bounce sound off side walls like in the animated graphics on soundbar websites, because I haven't got any side walls. (For reviews I used to compensate by bringing up some baffles from the garage to simulate side walls, not that many soundbars can really do this trick well. More recently, since I added Atmos and a TV to the main music room, I listen to soundbars in there instead.)

But it's not only the virtual surround-bouncing antics of soundbars that use reflected sound. No side walls means my standmount speakers have no first reflection point (the position on the side walls halfway between the speakers and you). These points simply don't exist for Australians living in similar unbounded living spaces. Windows open, doors open: that's how we live, and I love that. And the attitude, too.

"Don't worry about the neighbours," my neighbour told me over the fence the other day. "Do you know what it was like round here in the 70s and 80s? Hi-fis in every other apartment, all going at once on weekends, everybody waving and chatting. Now it's all headphones and no one talking to anyone," he said, looking somewhat downcast as he wandered back to sit in his garage with his beer fridge and transistor radio which blares out the sport all day. We never complain, of course, lest someone brings up all the harmonied *Hallellujah*s. This is Australia, mate; no worries.

Digressing once more. So let's think. What countries are especially renowned for speaker design? Well it's Denmark, isn't it. And even with global warming I don't think that's yet a doors-open windows-open kindaplace. Nor the UK, nor Japan; certainly not Canada, with its NRC, and Floyd Toole, and the Athena project that came up with an ideal (as in listener-preferred) curve which incorporates 'RoomFeel', as Paul Barton calls it — room reflections, led by those from the first reflection point.

Whereas over here, I fear, some of us have very little RoomFeel at all to enjoy, except an upkick from the coffee table and a slap echo from behind. (Handy tip, though: pull out your comfy sofa some distance from the rear wall, if you can. I was once, many moons ago, lucky enough to spend a day with Floyd Toole himself as he helped to judge CEDIA projects, and any couches against the wall were an instant #fail.)

I don't know enough about acoustics to go much further with this rambling debate. If this piece goes online, I'll leave a big gap here to add corrections from those who are more versed in those dark arts than I. Dear Greg, hallowed erstwhile-Editor of *Australian Hi-Fi*, has over the years donated me quite the collection of books on acoustics and loudspeaker design, which I can pull out in an emergency to say something that sounds knowledgeable, but when I search their pages for a boundless listening room without a contained volume of air, all those Northern Hemispherical boffin types clearly never imagined such a thing. No walls, you say? Bit rash, wot? Where would you hang the herring?

Fake your walls?

However, there might be a way to compensate for Australia's wild architectural hedonism. We are currently seeing an increasing rise in the use of microphone-based calibration on stereo amplifiers and soundbar systems, as well as their more traditional use in multichannel AV receivers. With ever-increasing smart stuff appearing in our hi-fi amplifiers, we can expect more movement in this direction.

So calibration could analyse the room and perhaps compensate for our open lifestyle, if the parameters lie within its bounds for correction. Should we all go and calibrate our stereos?

To be honest, I'm still not a great user of DSP correction by calibration. I know, I know — the proof's in the pudding, and I've had great hi-fi authorities extol its merits to me, although just as many have quietly admitted their own particular systems are really for the correction of common errors and would not be "for the likes of you and I", they say with a wink.

I'm aware that my resistance is more instinctive than technical, but really, if I spend thousands of dollars keeping my signals pure as can be, all through the hi-fi chain, then why do I want to risk all that effort on the whim of a digitally-imposed curve derived from a little puck mike that costs (checks Alibaba.com), well, not much, and sits pretty vaguely positioned on a cardboard stand you've had to assemble and balance on a chair? With some of those microphones there's no indication how or whether to point them — and if they're omnidirectional, then how do they assess what's going on?

But I always try it, of course, when products come in which offer calibration. On the whole it doesn't do much at all, which I take to be a compliment to my room (my main listening room, not the wide one). And I have, in fact, been persuaded by calibration a number of times, notably with Anthem's ARC, for which a proper microphone comes in the box, and a proper boom microphone stand too. Clearly Anthem is a company that understands the importance of *accurate* measurements, not a puck on a pile of books. If nothing else, this gives you confidence in the system delivering a useful result, which on that occasion, even in my main listening room, I decided it did.

After all, as a German acoustic guy said to an EISA presentation recently — "Half the sound is our speakers, half the sound is your room." (So why doesn't his system offer calibration then?, we asked, to his perplexion.) But many speakers certainly are designed with the expectation of reflections — that the off-axis sound will add to the on-axis sound. This is perceptually received as 'better', says the Canadian Athena research.

Getting hygge wit' it

So if you have a nice hi-fi in a wide open space as described above, you might want to try having some tall baffles that you can slide into position at your halfway points during critical listening to create first reflections. Partners will love them, kids can run into them, etc.

Or do as I do, and have yourself a dedicated room, a prepared space, to which you can retire, high-*hygge* Danish-style, with walls and everything, to enjoy the best possible conditions for your choice of entertainment system. Turn it up, and drift away. Perhaps check your phone occasionally for messages from the neighbours.

Cheers! **Jez Ford, Editor**

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Aussie power from Encel's Brains

Sam Encel is the brains behind 'Brains', a sleek new amplifier from Melbourne company Encel, adding to the brand's other "*friendly audio products for music-loving Australians*": the 'Gelati' bookshelf speakers and a 'Harald' Bluetooth streamer.

"I wanted Encel's offering to be so nice that you'd learn about it and even start dreaming of it ahead of speakers or a turntable," he says. "Brains' sound and features are really special for the price, but it's also something that seeks to be beautiful, timeless: a vital part of your home."

The custom steel chassis is fronted by an aluminium fascia finished with a fine sand-blast, available in black or white, featuring classic bass and treble controls, a minijack headphone output and, pleasingly, direct selection of all the inputs (also available via its neat remote control). These comprise three line-level analogue inputs, a phono input for moving-magnet turntables, one each of optical and coaxial digital inputs, plus Bluetooth with aptX HD. Inside a high-current, low-noise transformer supplies power to the Class-AB amplification rated at 40W per channel into 8 ohms (20Hz-20kHz, THD <0.03%), while digital conversion uses a 32bit/384kHz TI PCM5102 DAC.

The price is friendly, too: $799. More info: ***www.encel.com.au***

The Burgers are back

As predicted, the rapid sell-out of the updated Anniversary edition of the 1983 Sound Burger has led to a new production run for these fun and surprisingly effective portable vinyl spinners. The Limited Edition 'red' has been retired, but Audio-Technica will continue to flip its Sound Burgers in black, white and yellow versions, still featuring the new Bluetooth output for wireless speakers and headphones, in addition to the wired line-level output. USB-C charging gives some 12 hours of battery life. The new Burgers are designated as SB-727, and will sell for $429. More info from **www.audio-technica.com/en-au**

'Little brother' M3x DAC

Musical Fidelity has announced the M3x DAC, expected to arrive late in August with a price point around $2700. It represents a little brother that harnesses the abilities of the successful M6x DAC (at $4200), but instead of that DAC's dual-differential ESS ES9038Q2M chips it uses an upsampled TI PCM1795 DAC, playing at 24-bit/192kHz, accepting up to 32-bit/192kHz PCM and DSD 256.

It retains the excellent and useful front-panel indicators showing exactly what signal is being received, while inputs include two optical, two coaxial and USB-B. Outputs are available as both unbalanced RCA and balanced XLR, and it features the company's Super Silent Power Transformer. More info from: ***www.audiomarketing.com.au***

TCL brings bar, TVs & air-con

TCL these days is out to extend its provision of home entertainment into white goods, recently announcing TVs, a soundbar, air-con systems, fridges and washing machines in one big Asia-Pacific showcase of multi-category innovation.

Vital as we consider fresh air and clean clothes to be, we'll focus on the AV side. This includes the latest C845 generation of Mini LED TVs with quantum dot enhancement, claiming peak HDR brightness right up to 2000 nits. We review the $1999 55-inch C845 this issue (see p42), and this range rises to 65-inch ($2999), 75-inch ($3999) and 85-inch ($4999) models.

There are two lower TV series as well. The C745 series combines QLED with Full Array Local Dimming technology (peaks of 1000 nits) in the same sizes, with prices from $1395 to $3495. And the C645 series of QLED TVs covers lower sizes down to 43-inch, and again up to 85.

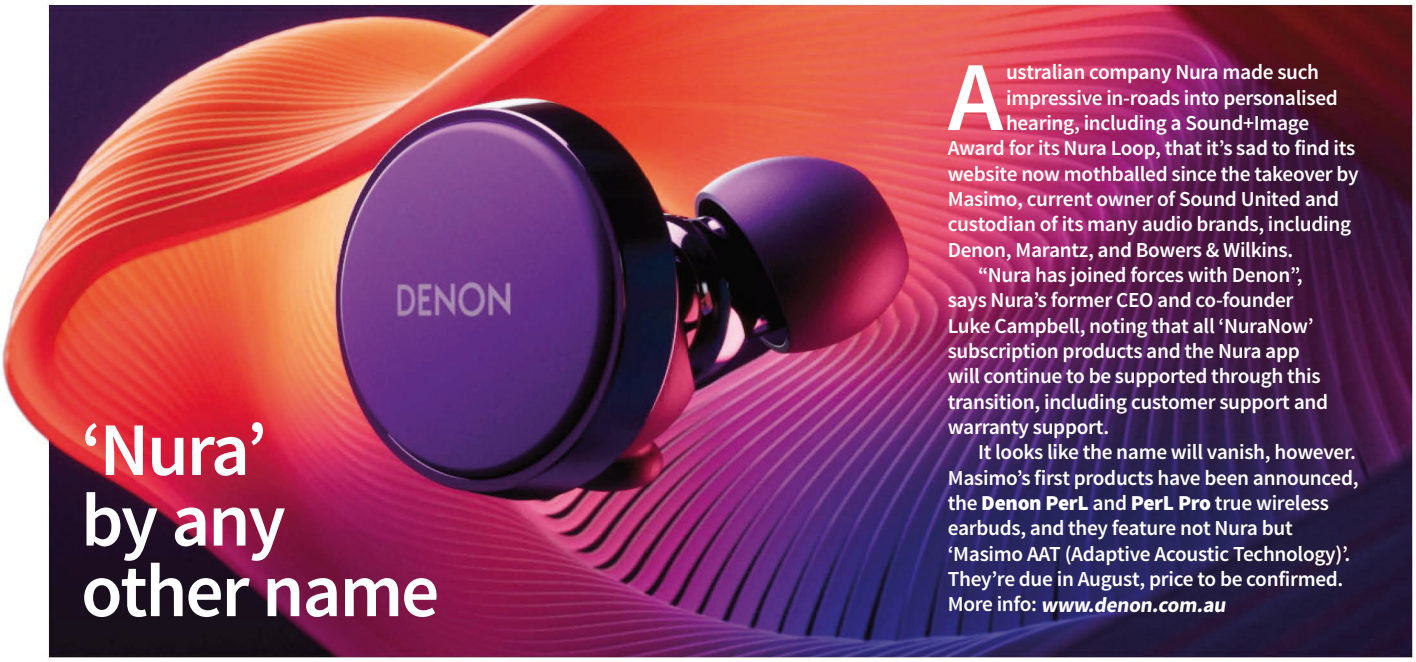
P733W soundbar

Pictured above is the Chinese company's new P773W soundbar which, as you can see, comes with a sizeable wireless subwoofer standing 36cm high and featuring a rear-firing 6.5-inch driver and port, which should make for some wall-reinforced bass response.

The soundbar is 90cm wide and operates in 3.1, with a 36mm tweeter and 92×40mm full-range racetrack driver for each of the left and right channels, with just a racetrack driver providing the centre channel.

There is 'Dolby Audio' but no Dolby Atmos here — no height drivers nor any angled sideways — yet TCL's product video shows sweeps of sound encircling the room to reach the viewer; this is perhaps courtesy of the included DTS Virtual:X processing, or maybe the bar's 'AI Sonic-Adaptation' room calibration. This has an unusual feature, which allows users to instruct the bar to focus the sound either straight ahead or significantly to left or right, which might be very useful for those inexplicable lounge layouts where sofas don't face the screen. (We'd advise moving the furniture, really, but for those who can't, TCL can now help.)

The P733W has HDMI ARC and optical inputs, also Bluetooth streaming and a USB-A slot, and it can be wall-mounted. We hope to review this unit soon, especially since it comes at a pleasingly low $449. Info: ***tcl.com/au***



'Nura' by any other name

Australian company Nura made such impressive in-roads into personalised hearing, including a Sound+Image Award for its Nura Loop, that it's sad to find its website now mothballed since the takeover by Masimo, current owner of Sound United and custodian of its many audio brands, including Denon, Marantz, and Bowers & Wilkins.

"Nura has joined forces with Denon", says Nura's former CEO and co-founder Luke Campbell, noting that all 'NuraNow' subscription products and the Nura app will continue to be supported through this transition, including customer support and warranty support.

It looks like the name will vanish, however. Masimo's first products have been announced, the **Denon PerL** and **PerL Pro** true wireless earbuds, and they feature not Nura but 'Masimo AAT (Adaptive Acoustic Technology)'. They're due in August, price to be confirmed. More info: ***www.denon.com.au***

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The Hi-Fi Headlines

NEWSLETTER NO.265

Technics have just released a white version of their popular SL1500C semi-automatic direct drive turntable – joining the silver and black options already available. This has been a very popular model for Technics – a performance turntable with automatic stop and a built-in phono stage, all for $1,995.

Another hot offer is the upcoming Rega Planar 3 50th Anniversary turntable. This is not due until September, and is being released to mark Rega's 50th anniversary, and will sell for $1,899. It is based on the current Planar 3, but with a walnut plinth and also featuring a Neo PSDU Mk2 external power supply, a EBLT belt upgrade and an Exact moving magnet cartridge. At this stage we do not know how limited this limited edition will be, but we are taking pre-orders.

And still on the subject of turntables we now have the McIntosh MT10 turntable on demonstration. In true McIntosh tradition this is a very distinctive piece of kit, priced at $24,495

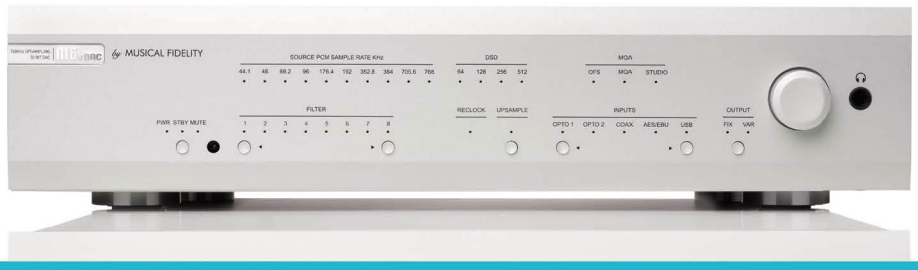
One company that can do no wrong at the moment is Musical Fidelity. They continue to announce new product and one recent release was the M6X DAC. Despite just hitting the market the MX6 DAC was named the Sound and Image DAC of the year. It is easy to become blasé about DAC's – but they do play a very big part in the performance of your system – and trust us, they are not all born equal. If you already have a good system the addition of the M6X DAC at $4,200 would be money very well spent.

The Yamaha YH-5000SE headphones also took out a Sound and Image Award. No surprise that they did - these are exceptional headphones that hark back to technology first introduced by Yamaha ½ a century ago. This headphone spent six years in development and production, and the wait was worth it. Drop in and have a listen.

Bang & Olufsen's Beosound A5 is a recent addition to a growing lineup of portable speakers from the Denmark-based firm. The realm of battery-powered Bluetooth speakers has seen remarkable advancements in quality, exemplified by the Sonos Move released a few years back. B&O has elevated this trend to a

whole new level of elegance with the A5. Priced at $1,650, this speaker not only boasts a stunning design but also delivers a performance that lives up to its aesthetics.

Finally – in this age of rampant inflation it is great to see prices come down – and that is exactly what Marantz have done, and in some cases quiet significantly. For example their popular CD6007 CD player has dropped from $1,299 to $1,000 and the PM-7000n streaming integrated amplifier is now $2,000, down from $2,400. Marantz has always been one of the most reliable and better performing brands in the A/V mid-market – these new prices certainly make them ultra-competitive as well.



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lenwallisaudio.com

21st century SNAIL

Bowers & Wilkins Nautilus

There is no loudspeaker design in history more iconic than the Bowers & Wilkins Nautilus. Completed in 1993 by a small team of engineers after a five-year project, the Nautilus was a no-holds-barred design which its originator, John Bowers himself, didn't live to see completed. Right up to his passing in 1987, Bowers had been obsessed with the idea of perfecting speaker sound in one spectacular design, not intended to sell in quantity, but a project aiming at perfection, the concepts from which might then trickle down into lesser ranges. Years were spent investigating backless dipole speakers to remove cabinet coloration, but neutrality was never achieved, and those experiments were abandoned.

According to Dr Peter Fryer, Head of Research at the Steyning Research Establishment at the time, John Bowers deliberately passed the task of carrying on his quest to just one engineer: Laurence Dickie. 'Dic' chose stiff pistonic cones for the drivers, and mounted them in long, straight 'transmission-line' pipes filled with absorbent fibrous wool, like a horn in reverse. Thus was the 'Nautilus' tube concept born.

The larger the driver, however, the longer the tube required behind it. With a four-way configuration, the 12-inch driver would require — oh dear — a tube extending a full three metres behind the driver. The elegant solution was to curl it up as it tapered, and after a few prototypes, the final and now-famous snail shape was nailed by an art graduate from Brighton College of Art, Alison Risby.

The design, being considered timeless, has never been given a modern revision other than material improvements. For the 30th anniversary B&W created this unique pair in Abalone Pearl, referencing the mollusc (not really a snail) from which the Nautilus takes its name.

Still handcrafted in the UK, the Nautilus in standard colours sells for $115,000 a pair. More info: ***www.bowerswilkins.com/en-au***

SONY

Image courtesy of Sony Pictures Entertainment, Spider-Man™: Homecoming.

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4K HDR SXRD

VPL-XW5000ES

Laser | 4K HDR | 2,000lm

4K HDR SXRD

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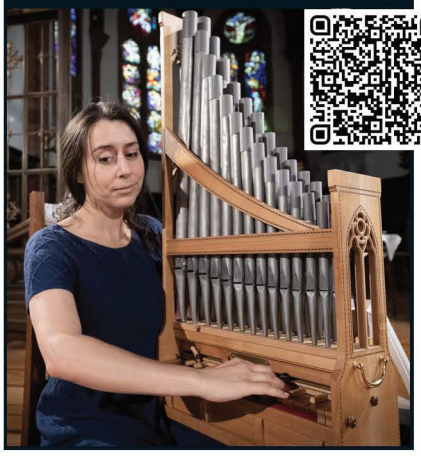
ATMOS MUSIC SUPREME

Engineer Morten Lindberg and his Norwegian record label 2L have been making multichannel music recordings for decades; he has received 42 Grammy nominations since 2006. The latest is Trio Mediæval's 'An Old Hall Ladymass' which also features Catalina Vicens, playing something called an organetto (below), all released in 7.0.4 Dolby Atmos and other formats on Blu-ray and SACD. Our Editor has gone nuts over this, and has penned an internet-only rave about it, which you can read on ***whf.com*** via the QR code here. 2L's website is ***www.2l.no***



TAGA HARMONY: from Warsaw to Australia

TAGA Harmony is a new brand to Australia, but has a history back to the early 1990s, when its two founders — from Poland and Germany — formed the brand to deliver the high-end sound that they weren't enjoying from products available to them. The brand today has an extensive product portfolio, including hi-fi and home theatre speakers, in-wall/in-ceiling and outdoor speakers, multimedia speakers, hi-fi electronics, audio cables and accessories, with its main European office in Warsaw, along with 'TAGA Audio Technology Company Limited' offices in Shenzen, China. 'TAGA' is said to stand for the company tagline: 'To Achieve Glorious Acoustics'.

Simple outside, smart inside: the TAGA Harmony TWA-10B streamer.

Pictured above is one of the company's intriguing range of hybrid amplifiers, the $845 HTA-600B, which uses a pair of 6H3 valves in its preamp stage, visible through the amplifier's tinted front window, plus 30W of Class-AB power into 8 ohms. If you need more, hybrid models rise to the $4600 HTA-2000B v2, with 150W per channel.

Perched atop the amplifier is a recent new product, the TWA-10B streamer, a very simple looking box but with significant features including Wi-Fi network streaming and Bluetooth as well as online streaming services and internet radio, all served by an ESS SABRE ES9023 DAC through to three output options: gold-plated analogue RCA, optical digital and gold-plated coaxial digital. Its Australian price is $495, and we hope to play with one shortly.

TAGA is coming to Australia courtesy of Audacity Australia, which also distributes Lenco, Airpulse, Xtreme Mac and Nakamichi. More information from: ***audacityaustralia.com.au***

KEEP THE DATE!

The Australian Hi-Fi Show has been confirmed for Sydney next year, and will run from Friday 5th to Sunday 7th April 2024, in the same venue, the Novotel Sydney Central, just a short walk from Sydney's Central Station.

You can see the quality of this year's rooms in our Show Report starting on page 74, but of course it's really all about *hearing* the rooms, so if you missed this year's show – or if you reckon by next April you'll be ready for more – put a big ring around that weekend, and then keep watching this space for ongoing announcements on the Show!

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HIGH END® munich

Our top picks from the hallowed halls of Munich.

MERIDIAN DSP9

Meridian took its brand-new DSP9 speakers to Munich, fully active or "digitally-driven" as the company prefers, being no newcomer to the concept, its first D600 "digitally-driven" speaker having appeared back in 1989. The new 110cm-high model is seen as a leap forward, with new curvy cabinet geometry, the longest list of proprietary technologies we've ever seen, and well over 1000W of internal power: Class-AB for the beryllium tweeter and midrange, Class-D for the woofers. In addition to SpeakerLink, a host of inputs allows up to 32-bit/384kHz compatibility. Australian price is currently $142k/pair in black, or $153k in a custom colour.

CHORD ELECTRONICS Ultima Integrated

The British company's first full-width integrated amplifier in years boasts an output power of 125W into 8 ohms and has just four inputs, all analogue — **Chord** presumably assuming you'll use one of its widely acclaimed digital solutions in cahoots with the one fully balanced and three unbalanced inputs here, each individual buffered with selective filtering against radio frequency interference. The metal case itself is aircraft-grade aluminium, with the lid featuring a vented design and a dimmable LED light ring. The Ultima Integrated is available in a choice of 'Jett' Black or tautological Argent Silver.

BLUESOUND Node X special edition streamer

Bluesound showed a special limited edition run of its Node music streamer, the 'Node X', celebrating the brand's 10th anniversary. Outside it has a special silver finish (we guess the 'tin' more traditional for 10th anniversaries lacks glamour), but the SE is more than skin-deep, including a premium ESS 9028Q2M Sabre DAC and a full-size headphone jack (something we hope might stick for the next generation of Node) along with a new headphone amplifier section that uses THX's AAA (Achromatic Audio Amplifier) technology. It retails here for $1299, which is $300 over the standard Node. For more Bluesound, see our streaming feature starting on p24.

MUSICAL FIDELITY LS3/5A, LS5/9 speakers

The 'retro' craze was well-represented at Munich this year, and **Musical Fidelity** tripled down on the heritage factor. First it showed two pairs of 'BBC' speakers: the pictured near/mid-field LS3/5A, a two-way standmount built to the legendary BBC R&D '1976/29' design; these have a 19mm tweeter, 4.3-inch woofer, 15 ohms and rather low 82dB sensitivity. The weightier, larger and easier-to-drive LS5/9 (32mm tweeter, 8-inch woofer, 8 ohms, 89dB sensitivity) replicates BBC R&D '1983/10' design from 1983.

MUSICAL FIDELITY A1 integrated amp

This one is giving us flashbacks – a revival of the company's pure Class-A amplifier from 1983, identical outside and in, though with an updated transformer, power supplies and modern low noise components. The A1 was renowned for driving anything with its 25W of pure Class A power into 8-ohm loads with 25A maximum output. One question: will the company follow up with a B1 replica? Because we've got some good stories about that one...

MCINTOSH ML1 MkII loudspeakers

Modern reinventions of the company's first ML-1C, the new **McIntosh ML1 MkII**s preserve the two-part baffle design of the oiled American Walnut solid wood cabinets with satin-finish veneer (though no slats on the cloth grille this time around). But there's a full internal revamp of the five four-way drivers: 0.75-inch titanium tweeter, 2-inch tweeter, twin 4-inch midranges and 12-inch woofer. Nice! — though this time travel doesn't come cheap: Australian pricing is set to be $25,990 a pair.

NAIM NAIT 50 amplifier

To celebrate its 50th anniversary, Naim has released a special edition Nait 50 integrated amplifier, an update on (and a love letter to) the firm's Nait 1 from 1983, though with a new headphone output and mm phono stage design. The half-width design is a limited run, however, with only 1973 (the year of Naim's founding) units to be produced. Get in quick!

NAGRA Classic DAC II

Now incorporating the same NADM (Nagra Audio Digital Module) digital engine as used in the Swiss company's range-topping (over $100k) HD DAC X, this new update on Nagra's acclaimed Classic DAC was on show at Munich, with an improved Class-A output stage, a new power supply (this can also be upgraded to an offboard Nagra Classic PSU), and exhaustive file compatibility including up to DSD256 — though Nagra says particular effort was made toward top performance from the "still vibrant" CD format.

YAMAHA NS-600A loudspeakers

Four affordable new products from Yamaha were at Munich — the R-N1000A and R-N800A streaming amplifiers, positioned below the S+I award-winning R-N2000A, and also the NS-800A and NS-600A (pictured) bookshelf speakers, with true piano-black finish and newly-developed Zylon 'Harmonious Diaphragm' cones. Australian pricing is expected to be $5999 and $3999 for the two speaker pairs, with the smart amps slotting into the range at $1699 and $2299. More on all these when they arrive on our shores later this year!

DALI Epikore 11 loudspeakers

DALI's flagship Kore speakers cost $149,000 a pair, so it's thoughtful of the company to bring out a more moderate design bringing Kore tech to a lower level – though the new Epikore 11s will still likely be around $90k here. A maroon finish will please Queenslanders, in addition to black and walnut, while the four massively-magneted 8-inch bass drivers should please everyone, below a 6½-inch midrange and the Kores' EVO-K hybrid tweeter of 35mm dome and ultra-thin ribbon. Meanwhile headphone fans can look forward to a high-end pair of DALI wireless noise-cancellers, the iO-12 headphones, expected to arrive here priced around $1500.

HIGH END Munich takes place over four days, with the first two days reserved for trade and press visitors. Next year's show runs 9-12 May 2024.

HIGH END munich

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Hi-Fi Retailer of the Year

SYDNEY HI-FI MONA VALE

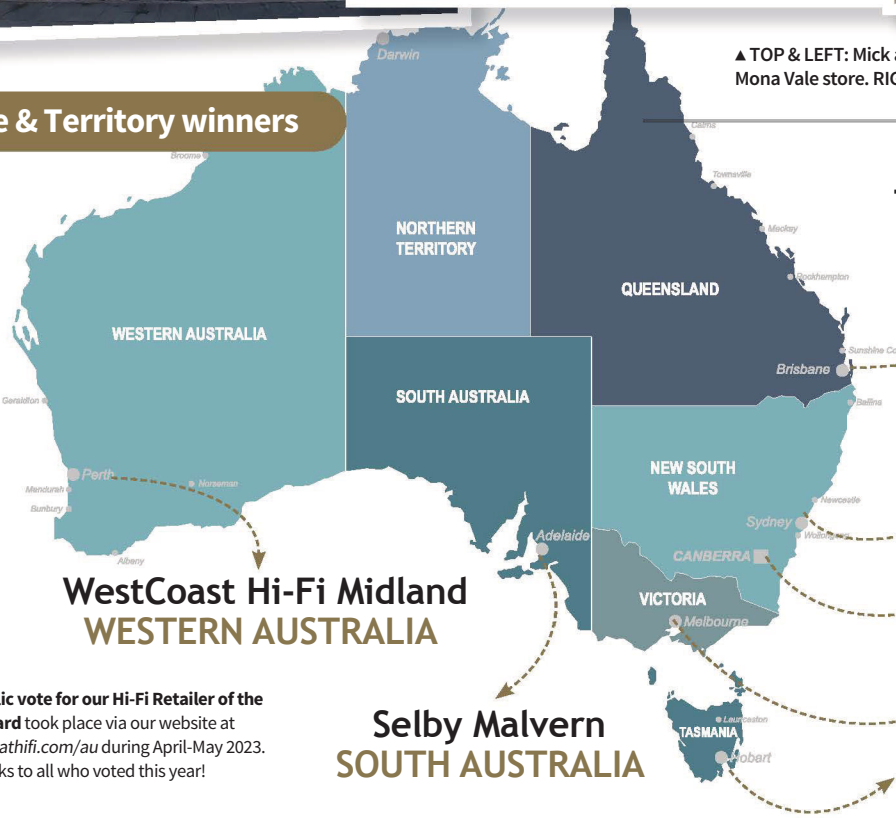
There was one award missing from our Special Awards Issue in May — the public vote for Australian Hi-Fi Retailer of the Year. But now the results are in, and the winner for 2023 is... Sydney Hi-Fi Mona Vale.

It's been a busy couple of years for Mick and Carmelina Stillone and the Mona Vale team: they recently opened a whole new off-site 'Warriewood Experience Centre', only to have the main Mona Vale store flooded out during the worst of the storms last year. They're back open now, in their corner location on Sydney's Northern Beaches (below), so whether you're popping in for some vinyl, an upgrade to some of the world's top brands of audio & AV, or a full-service home cinema with AV design, electrical and installation — Sydney Hi-Fi Mona Vale can do the lot, and from the voting has clearly gathered a host of satisfied and supportive customers. Their secret?

"Whether it's technical or understanding the basics, we listen, support and make sure you always leave with either the product you're after or a step in the right direction," says Mick. Find them on socials, or full info at: *sydneyhifimonavale.com.au*

▲ TOP & LEFT: Mick and Carmelina Stillone in the newly refurbished Mona Vale store. RIGHT SIDE: The new Warriewood Experience Centre. ▲

State & Territory winners



The Audio Tailor
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Sydney Hi-Fi Mona Vale
NSW & NATIONAL

Duratone Hi-Fi
ACT

HeyNow Hi-Fi
VICTORIA

Quantum Hi-Fi
TASMANIA

WestCoast Hi-Fi Midland
WESTERN AUSTRALIA

Selby Malvern
SOUTH AUSTRALIA

The public vote for our Hi-Fi Retailer of the Year award took place via our website at *www.whathifi.com/au* during April-May 2023. Our thanks to all who voted this year!

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The rise of music streaming has led to a far wider variety of solutions than just the ecosystems of the various streaming 'families'. So what's the right streaming solution for you today?

Streaming took the music world a little by surprise. Vinyl had given way to CD, but CD gave way not initially to streaming, rather to file sharing. In the early days there wasn't the bandwidth for real-time music playback over the internet — you downloaded the file and played it back locally. Those were the days of Napster and Limewire, with vast collections of low-res MP3s torrenting their way from peer to peer, from user to user to user. Record companies entered panic mode — this was illegal sharing! Lawsuits were issued against sharing sites, against uploaders, even against downloaders. Legal download sites were established: you could buy from Apple and Google stores; this was the new digital future under way.

Except it wasn't. You can still buy and download music files today, of course, and for many bands the Bandcamp model is a crucial way to reach fans directly and sell them music via download. But the digital market became dominated by streaming at a speed that took everyone, record companies included, largely by surprise. And that's why the big players on the supply side of streaming are not the record companies, but rather those that worked out how to scale up consumer streaming and to fund the model by subscription. Streaming continues its rise, and with that rise comes greater choice.

Most everyone these days knows how to stream music to a phone or tablet. But how do you listen at home on speakers? How is hi-fi streaming best achieved?

There are many ways — so many, indeed, that we see a great many systems which have multiple components capable of at least direct Bluetooth or AirPlay or Chromecast streaming. But if you plan it carefully, you can focus your funds on one streaming solution and achieve the best possible playback for your money.

Over the following pages we look at four different main ways of streaming, with examples of products we've reviewed and recommend.

First up is the standalone streamer, designed to plug into an existing system, turning old-fi into new-fi.

Second comes the smart amplifier, sometimes called a zone player, with built-in streaming and amplification, so you can just add speakers for a zone of streaming audio, and use the amplifier's additional inputs for other sources, such as vinyl.

Then there are two sets of complete solutions. You could buy an all-in-one system that includes streaming among its abilities. Or you could simplify still further, going for a pair of streaming active stereo speakers — these contain a streamer, amplifiers and of course the speakers, the ultimate in minimalist streaming hi-fi.

Which is for you? We hope that by the time you finish this section, you'll know exactly what you need.

1 MUSIC STREAMER

The simplest way to add streaming to an existing system for playing online music services, internet radio and network files.

Streaming: **Yes**
Amps: **No**
Speakers: **No**

2 SMART AMP / ZONE PLAYER

Adding amplification to a streamer creates a smart amplifier – just add speakers for a zone of music, and inputs to expand your system.

Streaming: **Yes**
Amps: **Yes**
Speakers: **No**

3 ALL-IN-ONE STREAMING SYSTEM

Put speakers in the same box as the streamer and amplifier electronics, and you have a complete streaming solution in one unit.

Streaming: **Yes**
Amps: **Yes**
Speakers: **Yes**

4 STREAMING STEREO SPEAKERS

Instead of one box, have two – putting the electronics inside stereo speakers will bring more 'hi-fi' qualities such as soundstaging.

Streaming: **Yes**
Amps: **Yes**
Speakers: **Yes**

Streaming: **Yes** Amps: **No** Speakers: **No**

Network music streamers

Streamers just stream; they plug into an input of your hi-fi to turn old-fi into new-fi, so your choice partly depends on your current system's ability to make the most of it.

WHAT TO LOOK FOR IN A NETWORK MUSIC STREAMER

WHAT'S YOUR CURRENT SYSTEM?
Standalone streamers suit people that already have an existing hi-fi system with a spare input: you just add the streamer as an extra component. So check first how you are going to connect it — and make sure your chosen streamer has the right output! Also try to budget for a streamer of a similar or higher quality to your current system. Or if your current system has a weak link — perhaps the amplifier — then consider whether your budget might be better spent upgrading that to a streaming amplifier.

WHAT'S YOUR SERVICE?
If you are a confirmed Spotify user, clearly you should make sure your chosen streamer handles Spotify. And look for Spotify Connect, which allows the streamer to access the web stream directly, rather than flowing via your phone (you still control the music from your phone). Despite promises of higher quality, Spotify is still a sub-CD-quality stream, while others offer higher quality services: Tidal's higher levels have MQA's 'kinda high-res' (pricey), Qobuz (also pricey) has lossless high-res. Apple Music has nicely-priced lossless and high-res but these cannot be streamed within other apps, nor can you AirPlay them at full quality from iPhone or iPad. If you want Apple Music at full quality, your only options are to plug in a Mac or an AppleTV 4K.

APP CONTROL
We strongly advise that you go to a dealer and try the app you'll be using before you buy anything. It doesn't matter how top-notch the circuits of a streamer, how brilliant its design, if you don't like the app and end up never using it. Our reviews always critique the app, as an essential part of the streaming experience.

In this regard an established company might be considered safer than a newbie, because if the company and app should ever disappear, chances are your streamer will become nearly impossible to use. We always give credit for remotes and physical controls that protect against such a scenario.

Streamers: award winners

Three streamers featured in our Sound+Image Awards last issue: full details there, but just to recap, the winners for 2023 were...

A CAMBRIDGE AUDIO MXN10

$899

The smallest and by a long chalk the most affordable of our 2023 award-winning streamers is the half-width MXN10, which uses Cambridge's excellent StreamMagic app as your interface, along with Spotify Connect, TIDAL & Qobuz built in, and Roon Ready too. It's excellent value.

Inputs: StreamMagic (Spotify, Tidal, Qobuz), USB-A, Bluetooth, Airplay 2, Chromecast
Outputs: digital, line-level RCA
Contact: synergyaudio.com

B MERGING +NADAC+POWER

$34,285

The electronics from Switzerland's Merging Technologies are rightly considered to be among the best in the world; the company was making studio ADCs and DACs before it made consumer gear. The price here includes both the NADAC streamer and POWER supply, but not the CLOCK.

Inputs: AES, optical, network (Roon Core/Ready)
Outputs: analogue line or balanced, headphone
Contact: absolutehiend.com

C dCS ROSSINI APEX CD/STREAMER

$49,995

The UK-designed and built Rossini Apex brings a CD player and a versatile preamplifier, as well as its network and music service streaming under the control of its excellent Mosaic Control app. The company credits its dCS Ring DAC for the stunning quality of the output.

Inputs: CD, Mosaic (Tidal, Qobuz, Spotify), AirPlay, USB-B, USB-A, 2 x AES/EBU, 2 x coaxial, optical
Outputs: line-level/balanced
Contact: advanceaudio.com.au

Arcam ST60

$2995

If you're adding a standalone streamer to a good hi-fi, Arcam's ST60 could be just the thing, combining full streaming abilities with digital inputs and a superb sound quality.

Arcam made its reputation in solid and dependable separates hi-fi, and was always a company which stretched beyond the aspirations of many others, for example by designing video disc players back in the days when usually only the big multinationals were able to afford such investment.

Streaming requires either a similar investment or collaboration with others — here the company's standalone ST60 streamer uses a streaming platform and MusicLife app which leverage technology from Airable for services such as Tidal, Qobuz and Deezer (note the focus on services of quality), as well as internet radio, podcasts, and playback of files over the network by UPnP. It fully decodes MQA, and is Roon Ready.

But there's no limit to what other apps you can use and throw from your phone, because lesser services can be sent direct via AirPlay 2 and Chromecast. And it improves its usability still further by having digital inputs — two coaxial, two optical, and a USB slot for drives or sticks.

So overall that's a sweeping offering in today's music streamer market — one that taps into the emerging habits of keen streamers.

Of course Arcam is no longer the lone little UK company it once was. Owned now by Harman International, itself owned by Samsung, it now has access to a vast pool of information and tech... although anecdotally in chats with other Harman people, it often seems to be Arcam's technologies which are in demand elsewhere in the organisation, not least its Class G: "the ultimate amplification technology", as Arcam modestly dubs it.

No amplification here, of course; the ST60 shows its hi-fi sensibilities in offering not only balanced and unbalanced audio outputs, but optical and coaxial digital options too, so that a superior DAC could be added.

But you'll need to have very high standards to be upgrading from the ST60's own delivery from its internal DAC and analogue outputs. The ST60 proved entirely self-assured in its delivery — big, full, solid and expressive. Perfume Genius's *Jason* came through with stark clarity in a soundstage that was open and broad, his falsetto vocal perfectly bookended in the frequency range by a solid substantial bassline below and an equally present and textured harpsichord up top.

Arcam has made improvements to its MusicLife app, though the app still isn't as sophisticated as some; for networked libraries we found ourselves preferring to use the free Bubble UPnP app, for example. And it's a shoame there's no volume knob and variable output, given its potential preamplifier abilities. Still, we should also note that the ST60 arrived in 2020, and normal product cycles might see a replacement coming in 2024.

But for now we can fully recommend the ST60, in which Arcam has carried its decades of sonic expertise seamlessly into the streaming segment, both with and without amplification, in one box. Its software may not be exemplary, its chassis design may not win best-dressed, but get over that and you'll be rewarded with the best streaming sound available for this money.

SPECIFICATIONS

Arcam ST60

Price: $2995

Inputs: MusicLife app (Tidal, Qobuz, Deezer), Ethernet/Wi-Fi, UPnP, 2 x optical, 2 x coaxial, USB-A, AirPlay 2, Chromecast

Output: line-level RCA, balanced XLR, optical & coaxial digital

Support: PCM to 32-bit/192kHz, MQA full unfold

Dimensions (whd): 433 x 102 x 306mmmm

Weight: 5.5kg

Contact: Advance Audio Australia

Telephone: 02 9561 0799

Web: advanceaudio.com.au

Music streamers: family members

If you're picking a multiroom platform for streaming throughout the home, it makes sense to stick within the family when buying a streamer to plug into your main system.

D E F

D SONOS PORT

The latest version of the original Sonos product, built to bring streaming to an existing hi-fi system. It's more powerful and future-proofed than the Connect it replaces, though it lost its optical output, and its analogue sound isn't price competitive at this level.

$699

Inputs: Sonos app, AirPlay 2, RCA analogue
Outputs: RCA out, coaxial digital, spare Ethernet
Contact: sonos.com/en-au

E HEOS LINK

The HEOS Link does the same thing as the Sonos Port, but sounds better, has Bluetooth and native high-res support. The HEOS app is comprehensive and easy to use, allowing multiroom as well between HEOS units. This is where your overall choice of 'family' is crucial.

$699

Inputs: HEOS, AirPlay 2, BT, 2 x analogue, optical in, USB-A
Outputs: analogue preout, optical digital, coaxial digital
Contact: denon.com/en-au

F BLUESOUND NODE

The Bluesound Node takes the sound quality up again, though there's a price penalty for doing so, and fewer inputs than on the HEOS Link. Again, though, if you're going Bluesound/NAD, this is your streamer. Also see the sexy silver 'X' version in our Munich news, p18.

$999

Inputs: BluOS app, AirPlay 2, minijack/minioptical, Bluetooth
Outputs: minijack analogue, digital coaxial
Contact: bluesound.com.au

Family is forever...

Sonos was famously first into streaming for the home, creating an ecosystem with a desktop controller before we even had smartphones or home networks capable of supporting such things. Sonos initially made its own mesh network in your home, but these days Sonos and nearly all other systems just hook themselves up to your home Wi-Fi or Ethernet.

Few of the different families that have come along since Sonos are interoperable; the hope of a common third-party app to unite these different worlds of streaming has floundered, though they're still out there — DTS PlayFi, Google and Alexa can all make different brands play quite nicely together, if you choose carefully.

Otherwise you should make your first pick very carefully, because once you have one piece of gear running Sonos, or HEOS, or Bluesound, or Yamaha MusicCast, then it makes great sense to stick with that same platform as you grow your system, to keep everything under one control and take advantage of their ability to play across multiple rooms at once. Family, as they say, is forever!

Aurender ACS10

$10,995

Streaming, yes, but also local playback of music files stored on capacious hard drives in this high-level digital-only product.

We've already seen two of our award-winning streamers demonstrating that there are few upper limits on either quality or price when it comes to streamers. And indeed Aurender here began in South Korea with the specific goal of making the best possible streaming and serving products, beginning in 2011 with the acclaimed S10.

Note the importance of 'serving'. This unit is significantly different to the other streamers in this section. For one thing it has only digital outputs; there is no DAC inside, so you'll need an amplifier with digital inputs. But ost importantly, in addition to its network and USB connections, and the 'Conductor' app which provides access to Tidal and Qobuz, the ACS10 has a CD tray to rip discs — and a huge amount of storage on which to store the rips, along with any other files you choose to transfer over to the ASC10. The unit has two hard drives, each 8TB in the version we reviewed.

The benefits of having central storage for your music are many. There are the advantages of short non-networked data paths for the music, all under a single clock, ready for glitch-free playback. Local central storage also removes all the problems of network shares and folder permissions which can cause havoc when a 'library' is compiled from multiple sources but then left to deal with network anomalies.

One of the downsides of using a consumer device to store your music files is that they'll fall outside of your normal computer back-up procedures. Hence the ACS10's internal hard drives are configured in a basic RAID format, so that each disk backs up the other. This halves capacity in the name of security, so our two 8TB drives gave 'only' 8TB total capacity. The discs can be reconfigured to non-RAID, which trades that back-up security for a doubling of space to 16TB.

Output is via a USB-A slot on the rear, designed to play data to a connected USB DAC. Aurender says that this is a "filtered and isolated USB Audio 2.0 port dedicated for pristine audio". And so it proved: the Aurender ACS10 is an impressive feat of engineering with enormous capabilities and superb reliability. Despite the wealth of useful and sensible options, it's even very easy to use… once you learn how.

The main difference is that the ACS10's digital-only nature requires a high-quality USB-B input on either an amplifier or a DAC, potentially expanding your streaming system by an extra box. But this is separates hi-fi at a high level, and separate boxes is the traditional puirst approach — even when we're deep in the new age of hi-fi-quality streaming... and serving.

SPECIFICATIONS

Aurender ACS10

Price: $10,995

Inputs: USB-A, Conductor app (Tidal, Qobuz), CD ripping in WAV/FLAC/AIFF to internal hard drives with metadata and cover art retrieval

Output: USB-audio (USB-A)

Capacity as tested: 2 x 8TB, RAID configured for 8TB total

Support: PCM to 32-bit/786kHz, DSD to 256 , MQA first unfold

Dimensions (whd): 430 x 96 x 355mm

Weight: 12.3kg

Contact: Synergy Audio

Telephone: 03 9459 7474

Web: synergyaudio.com

Streaming: **Yes** Amps: **Yes** Speakers: **No**

Smart amps & zone players

With a smart streaming amplifier you simplify the system: just add speakers, or use the inputs to build a bigger system. If you want it really simple, try a little zone solution.

WHAT TO LOOK FOR IN A SMART AMPLIFIER

IF IT'S THE HUB OF YOUR SYSTEM...
If this is to be your main hi-fi system, remember that the amplifier will be its heart, and to a large extent its soul, too. Look for high-quality amplification that will cope easily with your speakers of choice. Then look for versatility of inputs to suit your plans. Only then should you consider the streaming options.

IF IT'S A BONUS ZONE OF MUSIC...
If you're adding an extra and perhaps non-critical music zone to your home, there are relatively simple boxes with streaming and power to do that job (see overleaf). The critical thing for these is that they tie easily and robustly into your home control system.

WHAT'S YOUR SERVICE?
As throughout our streamer coverage, we recommend that you make sure any streaming solution easy accesses your current preferred music service. New kit is not the time to switch services as well — unless you're taking the chance to upgrade to a higher quality of streaming, moving from, say, Spotify to lossless Apple or Tidal streams.

THE RIGHT SMARTS
There are different ways for amplifiers to add smarts, and different smarts they can add. Some simply network, then allow you to 'throw' music via AirPlay from an Apple device, Chromecast from an Android device, or Bluetooth from anything. These may have no control app of their own, since you'll use native music apps and throw their output.

Others bring the full streaming abilities of music services directly into an app for the amplifier, which streams direct from the internet. This is better than streaming to a device and then streaming again to the amplifier. But often the way you can browse music in the amplifier's own app is not as nifty or pretty as on the native apps of the music services themselves. The ideal combination of these two is to have Spotify Connect or Tidal Connect available, as these use the native apps on your device but stream direct to your smart amplifier.

Smart amps: award winners

The three smart amps we recognise in this year's awards are all full-size amplifiers with streaming, rather than little zone players.

G DENON PMA-900HNE

$1799

Denon and Marantz share the excellent HEOS streaming and multiroom platform, yet amazingly this is the first integrated amp from Denon's hi-fi division to integrate it fully. The result is an excellent and versatile traditional hi-fi amp updated with top-notch streaming/multiroom..

Inputs: HEOS (Spotify, Tidal), phono, 3 each line & optical, coaxial, USB-A, BT, AirPlay 2,
Outputs: sub, speakers, rec, h/p
Contact: synergyaudio.com

H NAD C 700

$2699

Where the Denon and Yamaha amps hide their streaming smarts behind a traditional exterior, NAD's C 700 puts them on show with a large front colour touchscreen display. The interface and streaming use the same BluOS platform as Bluesound; the power here is HybridDigital UcD from Hypex.

Inputs: BluOS (Spotify, Tidal, radio), coaxial, optical, HDMI ARC, 2 x RCA analogue, AirPlay 2, BT
Outputs: speakers, sub, BT
Contact: ambertech.com.au

I YAMAHA R-N2000A

$4999

In our of our favourite amps of the year, Yamaha adds MusicCast streaming and multiroom without destroying the dual-mono analogue design of the main circuits in this gorgeous synthesis of classic versatility and design alongside thoroughly modern streaming abilities.

Inputs: MusicCast (Spotify, Tidal), phono, 3 line-level, 2 optical, coaxial, USB-B, HDMI ARC, AirPlay
Outputs: speakers, subwoofer, h/p
Contact: au.yamaha.com

NAD C 3050 (beyond LE) $2999

You want retro hi-fi design but with fully modern streaming inside? NAD's delightful C 3050 amplifier has you covered...

You love your streaming but you also love retro hi-fi? How to get both together? Well, NAD's C 3050LE Stereophonic Amplifier, to use its full name, might be just the thing. Its external design is based on a 1974 NAD 3030, but of course inside it's all modern engineering, which includes a full suite of network streaming features courtesy of the BluOS platform and support for AirPlay 2, as well as two-way aptX HD Bluetooth and Dirac room correction. Also onboard are HDMI eARC, line-level and phono inputs and a headphone amplifier, while the power circuits use the latest version of NAD's HybridDigital amplification. Indeed there's much here which duplicates the more modern-looking NAD C 700 (see opposite), but with more connectivity and classic VU meters instead of a five-inch colour touchscreen!

It launched as a 50th anniversary 'LE' Limited Edition, each amp uniquely numbered from 1 through to 1972, priced around $3299. But the good news is that the production lines will keep rolling out unnumbered standard C 3050 amps afterwards, at $2999, or $2299 without the modular MDC expansion slot to the rear. More info: ***ambertech.com.au***

Naim NSC 222 / NAP 250 $13,500 each

Naim was early into hi-fi streaming, and its latest New Classic separates take its highly-evolved Uniti smart amplifier solutions to a new level.

We're divided on the aesthetics of Naim's New Classics — some say sleek, some think asymmetrically fugly — but there's no doubting the quality to which Naim has taken streaming, partly because it was conceptually converted far before many other companies. The New Classic range takes the best ideas from the company's Uniti range of smart amplifiers and puts them into true hi-fi separates. There's a standalone NSC 333 streamer, which could be combined with the NAC 332 preamp and either NAP 250 or NAP 350 power amps. But there's also an intriguing two-box smart amplifier solution, pictured above. This uses Naim's new NSC 222 streaming pre-amplifier (left above) as a gateway to streaming services including Tidal, Spotify, Apple Music and Qobuz, as well as internet radio and networked music, along with AirPlay 2, Chromecast and Roon Readiness. As a preamp it also has additional inputs — phono, RCA analogue, two opticals, a coaxial, USB-A and, of course, a couple of weird Naim sockets.

With the streaming preamp doing all that fiddly stuff under the excellent control of Naim's app, you can pass power duties to a Classic Naim power amp, perhaps the latest stereo NAP 250 with eddy-current circuit breaking and improved power. More info: ***focal-naim.com.au***

Just add speakers: music zones

If you're not shopping for a full-quality main system, but rather for an easy way to add one or more zones of music to your home, these smaller boxes will keep things neat.

J SONOS AMP

$1099

The current just-add-speakers 'zone player' from Sonos beefs up the power output and adds a useful HDMI input (so that two of these amps can even operate in 4.1). It benefits from the robust and versatile Sonos eco system, even if it's not the last word in sound quality.

Inputs: Sonos app, AirPlay 2, RCA analogue in, HDMI ARC in
Outputs: speakers out, wireless subwoofer, 2 Amps for 4.0
Contact: sonos.com/en-au

K BLUESOUND POWERNODE

$1699

One of the best-regarded just-add-speakers players thanks to its BluOS streaming and multiroom platform complemented by a decent dose of NAD-sourced amplification. But it has a new competitor: a newer junior version. So see also our Powernode Edge review p57 .

Inputs: BluOS app, AirPlay 2, minijack/minioptical, HDMI ARC, Bluetooth
Outputs: speakers out, Bluetooth
Contact: bluesound.com.au

L YAMAHA XDA-QS5400RK

$3499

Some products can serve more than one zone of music at once. This Yamaha 'Quad Server' can, as the name suggests, deliver four stereo zones of streaming under its MusicCast app. Rackmount design points to its intended custom installation application (see panel).

Inputs: MusicCast app (Spotify Connect, TIDAL, Deezer, Net Radio), AirPlay, aux in, cut in
Outputs: Euroblock speakers out
Contact: au.yamaha.com

Custom installation

Streaming and multiroom have grown up alongside each other, so that if you have streaming equipment from the same 'family' around the home, chances are you can join zones together or have the whole house playing the same music, as well as operating them individually. With the best integrated systems, this has become fairly easy to achieve at a consumer level.

However, if you're planning from scratch to get music flowing around your whole home, perhaps in a new-build construction, and especially if you want to add video zones and/or distribution, lighting control, perhaps a dedicated cinema room, then we'd strongly recommend considering a custom integrator. Many big stores have integration teams that will plan and equip a full smart home or smaller system, but many integrators don't have 'bricks-and-mortar' stores: check our GOLD custom award-winners online, or seek out a CEDIA member as an initial promise of quality and ongoing technical education. Contact the professionals as early as possible — putting in cable conduits during home construction is a whole lot easier than doing it later!

Technics SA-C600

$1849

Technics loads up on facilities – CD, streaming, and a good variety of inputs – but holds up the quality on this well-priced and effective smart amplifier.

Technics was revived as a brand in 2014; Panasonic had short-sightedly dropped even its DJ turntables (and the licences for their design) just before cottoning on to the return of vinyl. Rather than go back only to DJs, it relaunched with a bling-filled designer range of quite high-end consumer stuff in silver and gold. But more recently it has found its feet with some solid and talented performers, such as the SA-C600.

It is what we'd call a smart amplifier, though it's so comprehensively equipped that some might call it a receiver, since it has both DAB+ and FM radio tuners onboard. For our streaming focus this issue there's an excellent app which oversees network streaming capabilities up to 32-bit/384kHz, along with support for Spotify Connect, Tidal, Deezer and Amazon Music, plus direct streaming via a choice of Bluetooth, Chromecast and AirPlay 2.

It also has physical inputs (see below), good in diversity if limited to just one of everything — moving-magnet phono, RCA line in, optical, coaxial digital, a USB-A slot on the front and a USB-B computer input on the back. There's a subwoofer output and an antenna connection for the radios, in addition to the speaker outputs.

Oh, and one other bonus — that's a CD player up on the SA-C600's aluminium top panel (most of the chassis is robust plastic), with a swivelling transparent CD cover of toughened acrylic.

That's a lot for the money, so that we were concerned about the all-important quality of the power and sound circuits, but we needn't have worried. The SA-C600 proves an admirably consistent performer across the board, bar one slight exception in that the single line-level analogue input sounds a little more opaque and dynamically constrained than we'd hope. Yet oddly the onboard moving-magnet phono stage sounds way better than is the norm from such built-in circuits, so good enough for most price-compatible turntables.

Otherwise we enjoyed a smooth and refined presentation, as is the Technics way, but with enough attack when the music demands. There's resolving power to keep instrumental strands separate, and it's an entertaining listen, communicating the musical message effectively. And it's all nicely easy to use (the app is perhaps better than the slightly clunky remote control operation).

All in all an unexpected but thoroughly pleasant surprise, and a well-conceived product. Often such systems are all about looks and features, but Technics has managed to add great sound into the mix in the SA-C600.

SPECIFICATIONS

Technics SA-C600

Price: $1849

Inputs: Technics app (network streaming, Spotify Connect, Tidal, Deezer, Amazon), CD, DAB+, FM, mm phono, RCA analogue, optical, coaxial digital, USB-B, USB-A, AirPlay 2, Chromecast, Bluetooth

Output: speakers out, subwoofer out, minijack headphone out

Dimensions (whd): 340 × 94 × 341mm

Weight: 4.8kg

Contact: Technics

Telephone: 132 600

Web: www.technics.com.au

Streaming: **Yes** Amps: **Yes** Speakers: **Yes**

All-in-one streaming systems

Getting everything in a single system simplifies the purchase decision and brings easy control of a relatively compact and neat system. It might not be so 'hi-fi', though.

WHAT TO LOOK FOR IN AN ALL-IN-ONE SYSTEM

IS THIS WHAT YOU WANT?
The arguments for hi-fi separates are the same as the arguments against buying an all-in-one system. WIth separates you can pick the best performing components from different companies. In the long term you can upgrade each bit at a time. If something breaks, you can replace just that bit. And you can have speakers wide for full stereo. With most all-in-one systems, none of those advantages will apply.

THEN AGAIN...
An all-in-one system offers guaranteed compatibility between components, easy united control, and most of all a neat system. If that's what you want, read on...

WHAT'S YOUR SERVICE?
As with all streaming things, make sure any streaming solution easily accesses your current preferred music streaming service, ideally directly through its own app, rather than requiring on-forwarding via AirPlay, Chromecast and definitely Bluetooth. Never rely on Bluetooth as your main solution for music listening; it's not good enough.

HOW BIG IS YOUR SPACE?
There are some surprisingly powerful all-in-one systems available, but most are designed for small and medium-sized rooms rather than large spaces. Using too limited an all-in-one system in a large room will probably mean pushing it too hard, resulting in distortion of various types.

DO YOU NEED INPUTS?
Some all-in-ones have no inputs at all; others have a single analogue minijack input. It's true that for streaming alone, you don't need inputs, but later you may wish to plug something in — a turntable, say, or even some new device invented in the future. Inputs not only allow such an expansion, they offer an analogue way to use a system in years to come when streaming has changed beyond the ability of your system's built-in smarts to handle it.

All-in-ones: award winners

We recognise the best at each price in our awards — from a beach-friendly Bluetooth speaker to luxury artisan Italian flair.

M JBL XTREME 3*

$300

It's a big battery-powered Bluetooth speaker, and with a bottle opener on its strap, the outdoor party nature of the Xtreme 3 is assured. But it's not doof-doof: we were impressed by well-proportioned stereo sound. Or for something smaller, JBL's little Flips are excellent value.

Inputs: minijack analogue, Bluetooth (*2022 winner)
Drivers: 4 + 2 radiators
Battery: yes
Contact: jbl.com.au

N RUARK R2 MK4

$899

Yes it looks like a lovely radio, but behind its ash-wood grille is a full modern streaming system with app control. We loved it both as a design and for the easy ways it brings access to music – with streaming plus radio it's a powerful alternative to less attractive wireless speakers.

Inputs: line input, Bluetooth, Octiv app (net radio, Spotify Connect, Deezer, Amazon Music)
Drivers: 2 x 75mm
Contact: synergyaudio.com

P SONUS FABER OMNIA

$3495

The Italian-designed Omnia exudes quality, from its wide walnut control surface to its rich expansive sound when streaming music via its various available paths. And check our review so you don't miss its secret EQ modes, which can make it sound even better...

Inputs: phono/line-level in, HDMI, Spotify+Tidal Connect, AirPlay 2, Chromecast, Bluetooth with aptX
Drivers: seven
Contact: synergyaudio.com

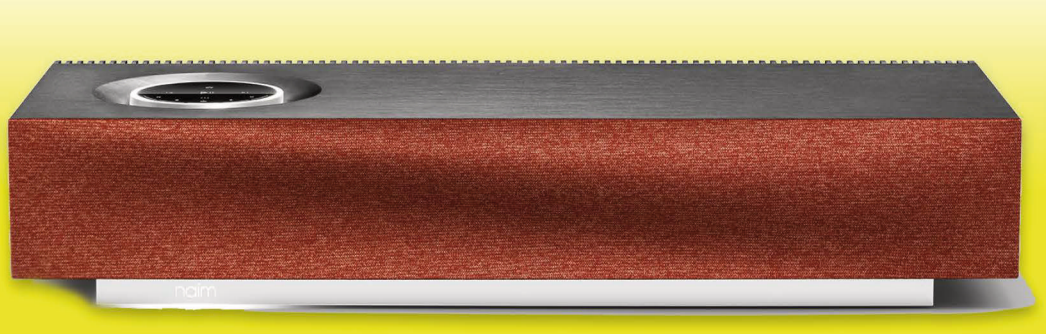
B&O Beosound A5

$1800 / $1650

The Danes consider the A5 their "ultimate portable speaker": 12 hours of battery life, Bluetooth when you're away, Wi-Fi when you're home, enabling Spotify, AirPlay 2 and Chromecast streaming. It uses the company's Mozart platform, which not only allows software updates but also modular hardware updates should standards change significantly in the future.

As always with Bang & Olufsen, design is to the fore, but technology too. The A5 is mono at the front: a 20mm tweeter and 13cm woofer, but a pair of 5cm drivers fire diagonally backwards using elements of the stereo signal to create a spacious sound. Meanwhile you can choose from the natural aluminium with Nordic Weave priced at $1650, or the anthracite aluminium with Dark Oak at $1800. The design is in collaboration with Danish-Italian design duo, GamFratesi, with clever touches like the top surface doubling as a wireless charger. But we wonder who chose the woven paper fibre and wood: the A5 is rated IP65, implying it's pretty waterproof — and in terms of ingress, it is. However B&O has had to add an note that the paper and wood materials "may be damaged by water". So it is waterproof, but don't get it wet. ***bang-olufsen.com/en/au***

Waterproofing aside, the latest all-in-one from Bang & Olufsen ticks all the boxes for streaming tech and Danish style.



Naim Mu-so & Mu-so Qb

$2900 / $1800

While our affections were this year captured by Sonus faber's Omnia take on the high-end all-in-one streamer (see opposite), it would be churlish not to mention Naim's pair of Mu-so systems also in this category. As we've seen, Naim was early into streaming, and has mastered the art of delivering it both robustly and at high quality. Yet the original arrival of the Mu-so was a surprise — being not the usual sort of thing from Naim — and a delight: we remember getting quite carried away with the magnificent knob on top. Were there an award for knobs, this one would get the gold.

Each unit is in its second generation, the larger main Mu-so currently $2900, the smaller Qb $1700, though grille colour variations can set you back an extra $150 each, and special editions even more. The new gen brought a useful HDMI input (the main Mu-so in particular makes quite the stylish soundbar), in addition to other physical inputs and excellent streaming abilities under Naim's own app, plus Chromecast and AirPlay 2.

But it's the sound which won so many hearts — smooth and sophisticated, doing a remarkable job of opening up despite being bound to single-box. The smaller Qb is less expansive but still well-balanced. Always worthy of consideration. ***focal-naim.com.au***

On first arrival, Naim's all-in-one speakers were a great surprise. Now they're a standard recommendation for streaming made simple.

Streaming soundbars: all-in-ones

We wouldn't normally push you towards a soundbar, but many bars do come with streaming built in — so if it's a TV and streaming system you want, they're an option.

Q BLUESOUND PULSE SOUNDBAR+

$1999

The Soundbar+'s Dolby Atmos delivery is impressively detailed, solid and satisfying, and it effectively combines spaciousness and clarity when playing non-Atmos soundtracks, too. But as with most soundbars, it's not quite as impressive when playing music.

Inputs: BluOS app, HDMI eARC, minijack analogue, optical, USB-A, Bluetooth, AirPlay 2, RCA analogue in, HDMI ARC in
Contact: ambertech.com.au

R JBL BAR 1300

$2000

Fully reviewed in this issue (see page 48), the Bar 1300 is pretty good with stereo music and great with Atmos music. There are many ways to stream to it, and you can even use each detachable wireless rear as a standalone Bluetooth speaker: three music systems in one.

Inputs: 3 x HDMI, 1 x HDMI eARC, Ethernet, Wi-Fi, AirPlay, Alexa Cast, Chromecast, Bluetooth
Outputs: Bluetooth
Contact: jbl.com.au

S DEVIALET DIONE

$3499

You'll note all our soundbars here are not cheap, least of all the Devialet, but that's because budget soundbars nearly all fall on their faces when trying to play a tune. The Dione, on the other hand, delivers a large-scale musical performance at hi-fi quality – for a price.

Inputs: HDMI eARC, optical digital, Ethernet, Wi-Fi, UPnP, Spotify Connect, AirPlay 2, Bluetooth
Contact: aqipa.com.au

The bar debate

We've spent so many years advising people not to buy soundbars that it's been very difficult for us to change our minds on this. But the fact is that we now regularly receive soundbars for review which sound pretty darned good, even with music, an area on which bars have traditionally been pretty awful. So while we'd still say that a good system with stereo speakers either side of your TV will blow most soundbars away, we must acknowledge the abilities of the best of them to fight back.

Similarly some soundbars have gained significant music streaming abilities — or the other way around, since each of the main streaming and multiroom platforms has developed a soundbar which can join their particular ecosystem. Sonos has the Arc, the Beam and the Ray; HEOS did have its own branded bars but now puts them under the Denon brand; Bluesound has the Pulse Soundbar+ shown here; we're surprised that bar-meister Yamaha only has one bar with MusicCast inside, but maybe there are more to come. If you've already chosen one of these platforms, then it could make good good sense to have one of their bars in your lounge, too.

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Streaming: **Yes** Amps: **Yes** Speakers: **Yes**

Streaming stereo speakers

The problem with those all-in-one systems is their lack of true stereo separation, which has, after all, been part of the hi-fi experience since The Beatles. Here's how to fix that.

WHAT TO LOOK FOR IN STREAMING STEREO SPEAKERS

ALL YOUR EGGS IN ONE BASKET
Active streaming speakers are the neatest solution in hi-fi. They are the entire system — a streaming source, internal amplification, and of course a proper pair of stereo speakers. As with all-in-one systems, this puts all your eggs in one basket; there's no way to enjoy a longterm upgrade path, and should anything break, you lose your whole system.

WHAT'S YOUR SERVICE?
As throughout our streamer coverage, we recommend that you make sure any streaming solution easily accesses your current preferred music service. New kit is not the time to switch services as well — unless you're taking the chance to upgrade to a higher quality of streaming, moving from, say, Spotify to lossless Apple or Tidal streams.

CHECK THE INPUTS
With no separate amplifier, any other sources will have to plug straight into the speakers. Think whether that is convenient in terms of your room layout, and check the inputs are available to add what you want — some wireless speakers have very few inputs at all, others are highly equipped and so versatile. An HDMI ARC input is becoming more common, and allows easy playback from compatible TVs.

HOW DO THEY TALK?
There's a difference between file handling and actual performance. An input may handle a 32-bit/384kHz input, but do its processing at a lower level. The bottleneck is usually the connection between the two speakers: some use a cable for maximum quality and reliability, whereas a wireless connection usually allows a maximum of 24-bit/96kHz, sometimes 24-bit/48kHz. In some cases there's no point paying for a high-res streaming service because it can't be played.

Speakers: award winners

It takes two, baby, for real stereo width and the finer points of soundstaging. These lovely pairs all took home our awards.

WINNER 2023 SOUND+IMAGE AWARDS

T KLIPSCH THE FIVES

$1749

Klipsch nailed these streaming active speakers, leveraging the company heritage for some lovely retro looks along with profoundly solid sound whether from TV (very useful HDMI ARC in), computer, Bluetooth or vinyl. We loved them lots; they won a 2022 Sound+Image Award.

Inputs: phono/line in, minijack in, HDMI, USB-B, optical, Bluetooth
Drivers: 25mm horn-loaded tweeter, 11.5cm woofer
Contact: klipsch.com.au

U KEF LSX II

$2300

Not pocket money for such dinky speakers, perhaps, but you get the amps, the streaming, the HDMI input — they could be your entire system for movies and music. And they sound great, much improved on the original despite being little changed physically. And five colour options too.

Inputs: KEF Connect app (Spotify, Tidal, Qobuz, Amazon, UPnP), minijack in, optical, HDMI, USB-C, Chromecast, AirPlay 2
Contact: kef.com.au

V PSB SPEAKERS ALPHA IQ

$2799

Small but surprising standmount speakers from Canada's 50-year-old PSB with both amplification within and extensive streaming/multiroom smarts available via the excellent BluOS platform from Bluesound. It's a powerful combination that needs to be heard.

Inputs: BluOS (Spotify/Tidal Connect, Qobuz, Deezer, Amazon), AirPLay 2, Bluetooth, minijack in, mm phono in, HDMI ARC, optical
Contact: ambertech.com.au

JBL 4329P Studio Monitor

Classic JBL Studio Monitor looks & design with amps and streaming inside...

JBL's 4329P Studio Monitor is a larger and so more full-range follow-up to the 4305P Studio Monitor the company launched in mid-2022. But clearly the heritage goes back far further than that — JBL's first two-way studio monitor to use a high-frequency compression driver with an acoustic 'lens' arrived as early as 1962.

This new model keeps the wide cabinet design that characterises the Studio Monitor range, in a black ash but so lovely in the usual walnut, in this instance housing an HDI horn-loaded one-inch compression driver and an eight-inch pure-pulp black-paper cone woofer with a cast frame. But the retro aspects of the 4329P end there: this is a fully active speaker, with a built-in 300W amplifier supplying 250W to the woofer and 50W to the compression driver, with digital signal processing used for the crossover between the two, as well as optimising the power handling.

For streaming, the 4329P uses Ethernet or Wi-Fi to stream via Chromecast, AirPlay 2 or Roon, with Bluetooth aptX also supported. A 24-bit/192kHz DAC can handle the main high-res audio formats, including Tidal MQA.

$TBA

Along with its wireless streaming features, the 4329P allows other direct connections, following its smaller 4305P sibling in offering USB-B computer connection, optical digital, analogue minijack, and balanced XLR/TRS analogue.

We can't wait to hear how they sound — our US colleagues who heard them at CES in January concluded that "they rocked". US pricing is $4500 a pair; expect Australian piricng to be $8000-$9000 depending on finish. More info: ***ambertech.com.au***

Klipsch The Sevens & The Nines

When you're onto a good thing, do it bigger! Klipsch brings bigger active boxes.

The Klipsch Fives (see left) impressed us with their depth, punch and musicality, so we assume such characteristics will be ramped to the max as Klipsch enlarges its active speaker concept with two larger models, the Sevens ($2399 a pair) and the Nines ($3499).

Both retain the 25mm titanium tweeter in a Tractrix horn, but the Sevens move up from the Fives' 4.5-inch fibre-composite woofer to a 6.5-inch woofer, and the Nines to an 8-incher, doubling the output at a metre distance each time from 109dB to 112dB and then 115dB, while extending the bass down from the Fives' quoted 50Hz to 34Hz -3dB and 29Hz -3dB (the Nines are said to reach right down to 22Hz with still 35% full output). The power increases in each model as well, from 20W for HF and 60W LF in the Fives up to 20W/80W in the Sevens and 20W/100W in the Nines.

Klipsch's active speakers are not equipped with full streaming, and do not network nor connect to the internet. But they pass the basics of streaming by including Bluetooth with aptX HD, while there are both analogue (switchable between line-level or moving-magnet phono) and optical digital inputs, so there would be no problem plugging in a separate streamer. Or use your TV's apps to stream, because the Klipschs also have a handy HDMI ARC for TV audio playback.

$2399
$3499

If you're measuring up, their respective heights are 31cm (Five), 42cm (Seven), and 49cm (Nine). Papaya-edged McLaren editions also available! More info: ***www.klipsch.com.au***

Pairing up: when two become one

Within the various streaming product platforms, you can often take two individual streaming speakers and pair them up for stereo, for dramatically improved results.

X JBL FLIP 6

The dinky little JBL Flip 6 is a great little Bluetooth speaker for the money, and it can pair up with another Flip 6 – or any JBL unit equipped with PartyBoost – to sound even better. Indeed you can link up to 100 of them, but if it's stereo performance you're after, two will do...

2 x $170

Inputs: Bluetooth in
Drivers: 16mm tweeter, 45 x 80mm woofer
Features: Battery, IP67
Contact: jbl.com.au

Y APPLE HOMEPOD 2

The new HomePod was designed to stream Spatial Audio and it sounds pretty good solo – but two of them paired in stereo is really what you need for the full Spatial experience. Or pair them both with an AppleTV 4K for Dolby Atmos playback from your TV and streaming apps.

2 x $479

Inputs: Wi-Fi, AirPlay 2,
Drivers: 5 x horn-loaded tweeters, 1 x 10cm woofer
Features: room-sensing
Contact: apple.com/au

Z SONOS FIVE

While the Era 300 Sonos speaker is newer and does Spatial Audio arguably better than Apple, the Five is still top of the range, the most powerful Sonos wireless speaker. One 'Five' can sit horizontally to play in stereo, but pair and turn them for more massive stereo sound.

2 x $899

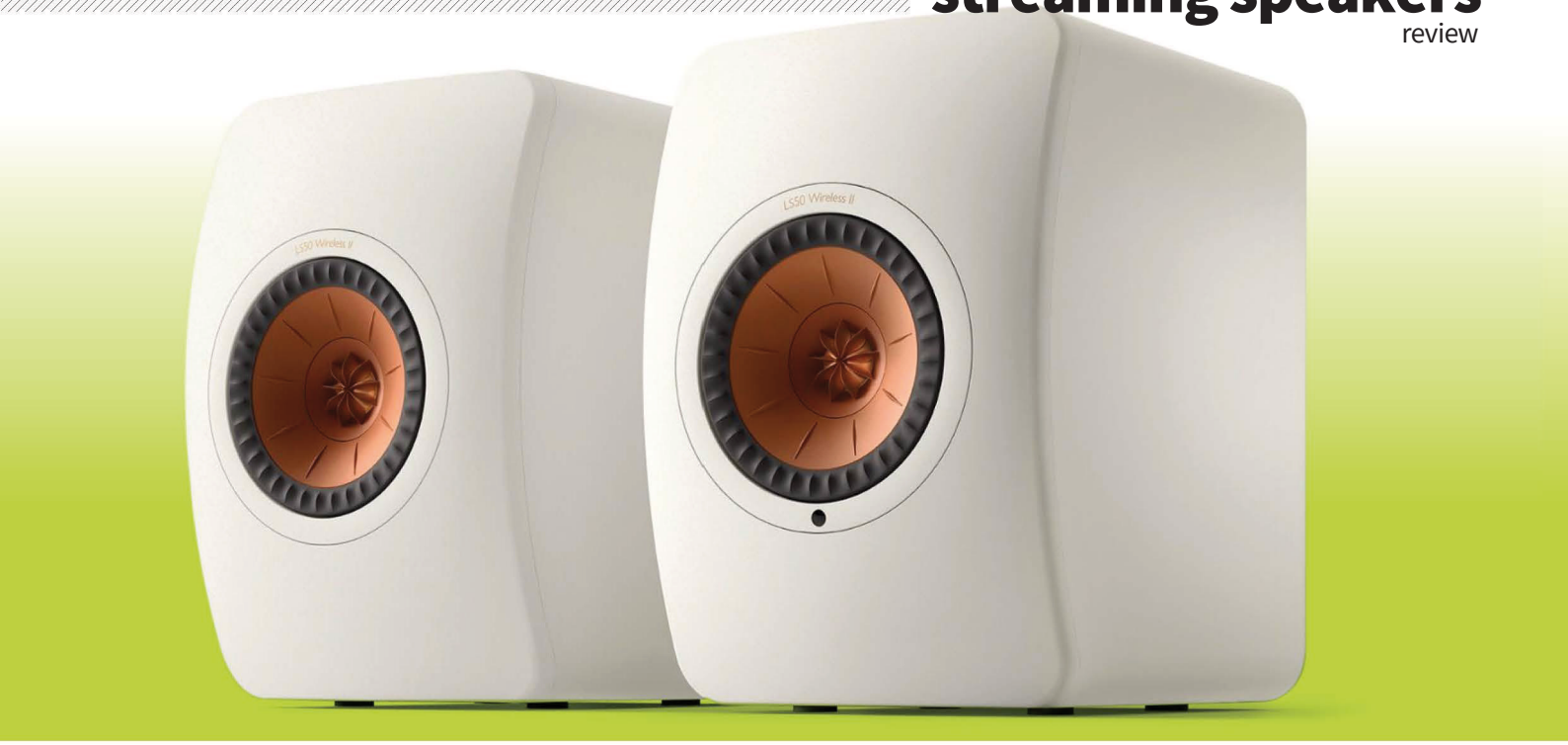
Inputs: Sonos app (many services), AirPlay 2, line in
Drivers: 23mm tweeter, 2 x 20mm tweeters, 3 x 10cm woofers
Contact: sonos.com/au

Beyond stereo

The ability to pair up wireless speakers in stereo can be extended. Some wireless and multiroom platforms allow certain models to be linked with their soundbars, for example, and then placed at the back of the room to operate as wireless rear speakers. This can be great for a big movie night — then you can take the speakers away again to use in other rooms for other things.

That, at least, is the idea. There are caveats, however. Each of those wireless rear speakers may need to be plugged into power. And some ecosystems are better at making ad hoc connections than others, with some quite bad at maintaining them without drop-outs or the disappearance of the rears. So we would not recommend choosing a group of wireless speakers with the specific intent of using them in this way as a permanently set-up. You'll be far better running cables and using proper home cinema gear if you're planning a permanent home cinema system.

But if it's occasional experimentation you're after, then it can be a great bonus.



KEF LS50 Wireless II

$4500/pr

The original LS50 Wireless defined a market. The latest version keeps these active streaming speakers right at the top of it.

It seems appropriate to end this issue's round-up of the many ways to stream with a listen to the latest version of a model which set the whole tone of the market for wireless streaming at a real hi-fi level.

The original LS50 Wireless launched in 2016. It took as its starting point the UK company's successful LS50 standmount speaker (today in its latest 'Meta' edition), then added amplifiers and streaming. Presto — all you need is the speakers, and a phone. And they are also such clean speakers visually, their tangerine-waveguided tweeters and ribbed mid/bass cones combined into one of KEF's long-running coincident Uni-Q assemblies.

Successful as the originals were, leading the way can have its limitations. They came with some control app hiccups, and you also had to connect the two speakers with a cable.

So the Wireless II versions introduced in 2021 address those small imperfections. They are tethered only to their power cables, communicating wirelessly at 24-bit/96kHz, a level which then defines all the internal processing. If you want more, you can put the cable back and shift up to 24-bit/192kHz native playback. And they come with a new and improved app that has more in the way of services as well as integrated control of the speakers — Tidal (with MQA), Spotify, Amazon Music, Qobuz and Deezer.

They have also been designed to squeeze even more performance out of the familiar chassis and two-in-one Uni-Q driver arrangement, especially through the inclusion of that 'Metamaterial' Absorption Technology (MAT). This involves a plastic disc behind the tweeter (shown below, designed to present an array of three-dimensional chambers, each absorbing a different frequency, and thereby acting as an 'acoustic black hole', as KEF puts it, absorbing 99% of the unwanted sound behind the tweeter.

This also required redesigning the UniQ assembly, here in its 12th-generation as defined by various specific ongoing improvements, to have a huge great hole behind the tweeter, so that all the back energy will reach the MAT disc. But it's worth it; every model into which KEF has installed a MAT disc has enjoyed a notable boost in its high-frequency performance.

There are analogue and digital inputs, a subwoofer output (KEF also has a wireless sub that can be used), and separate amplifiers powering the coincident drivers: a 100W Class-AB amplifier powers each tweeter, 280W of Class-D to each mid/bass driver.

The result is another triumph, now significantly more versatile, while KEF has lifted sound quality still further, retaining their clean and precise delivery, and their ability to fashion layered and defined sound-staging, while improving their punch and agility as well as their subtlety.

Yes it's 'all in one': no real upgrade path, all your eggs are in one basket. But what a basket! KEF here delivers all the promise of streaming convenience, yet also all the quality of true hi-fi. +

SPECIFICATIONS

KEF LS50 Wireless II

Price: $4500

Drivers: Uni-Q 12th-gen array: 25mm aluminium dome with MAT; 130mm aluminium cone

Power: 100W Class-AB (tweeter), 280W Class-D (woofer)

Inputs: HDMI ARC, minijack analogue, optical, coaxial digital, Ethernet/Wi-Fi, KEF app services, UPnP, AirPlay 2, Chromecast, Bluetooth 4.2

Outputs: subwoofer out; second speaker (optional)

Dimensions (whd): 305 x 200 x 311mm

Contact: KEF Australia

Web: au.kef.com

Bright young thing

TCL 55C845
Mini LED television

800 nits full white, 2200 peak: TCL's Mini LED retains its dazzle and continues to compete effectively with OLED.

SUMMARY

TCL 55C845
Mini LED Google TV
Price: $1999

+ Blazingly brilliant picture
+ Excellent motion handling
+ Two-position stand

– Google Home for set-up
– Internal mike on by default
– Some HDMI CEC issues

This impressive TV with a shiny Google TV interface brings the newest and latest tech from TCL, and in particular the 2023 iteration of its Mini LED backlight technology. In this, the titular diodes are grouped into zones behind an LCD panel enhanced by quantum dots (QD), a combination which does a very good job of challenging OLED performance in many areas, and beating it in several key areas, notably brightness, notwithstanding the increasing fightback in that lumen department both from standard WRGB OLED and from QD-OLED (the latter currently delivering effectively one-third RGB OLED light and two-thirds QD light).

In a briefing TCL gave to EISA editors recently on this TV and others, the European team indicated an even greater technology in the wings, perhaps a future involving ink-jet-printed OLED. But for now TCL is sticking with Mini LED, and this year it has taken the tech a step further. And we should remember that it was TCL which first developed and launched such Mini LED TVs, and that the Chinese company is huge in R&D, part of the reason it can claim to be number two TV brand by volume in the world, according to OMDIA figures.

We spent several weeks with the 55-inch C845, the most modest screen size of four, the new range adding to the previous C835's 55, 65 and 75-inchers with a new 85-incher for very good measure. Since the number of Mini LEDs can rise dramatically with size, brightness specs can vary, and larger C845s may light up your life even more than the 55-incher we enjoyed. But heavens, even this junior screen impressed us greatly.

The tech – what's changed?

There is a 900 series of Mini LED TVs above the C845, but those are not (yet, anyway) being refreshed, putting the C845, though lower in zone count, ahead a generation in technology. So let's start by seeing exactly what the C845 has gained over the previous C835 range.

So this year brightness is up, of course: HDR brightness up from 1500 nits in last year's specs to 2000 nits this year. We gather the full white brightness is 800 nits (impressive, especially considering the current 900 Series tops out at around 500) with peaks up to 2200 nits.

There are no more mini LEDs than previously, but TCL has doubled the number of zones by the expedience of splitting each former zone vertically into two, the main advantage being to achieve better local dimming and so, among other things, reduce bloom around primarily bright objects on a dark background, or into dark objects on a light background.

We're uncertain of the LED count per zone, but the zone count for the 55, 65, 75 and 85-inch models is now 480, 576, 720 and 896 respectively. Each zone is apparently tested during production and tweaked to ensure

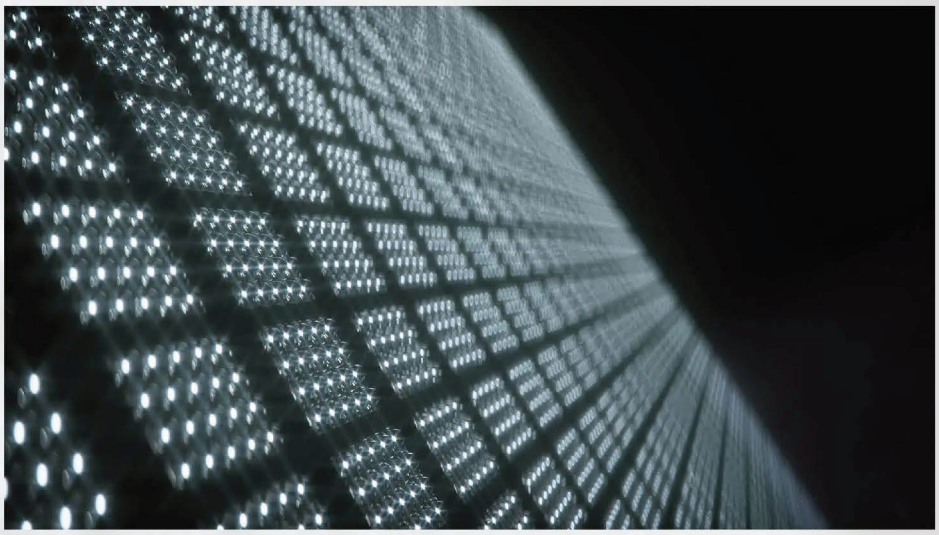
the backlight is uniform across the panel. To improve uniformity from each individual LED, there's also a new method for forming the lenses on the LEDs, cunningly crafting each in a single "glue-dispensing" process, each blob forming a 'single refraction free-form surface'.

The LEDs themselves now use a high-voltage Mini LED chip designed to emit light in three P-N junctions in series, not like a thyristor gate or rectifier, but emitting light at all three junctions to amplify the available brightness, almost like three LEDs in one. This would raise the excitation levels of the quantum dot layer, the vibrating QD nanoparticles which create the actual light that reaches your eyes. The combination of Mini LED through LCD with the quantum dot enhancement film delivers highly accurate colour performance, the best of any of the various technologies used by TCL, it says. It delivers 100% of the DCI-P3 colour space, or to put it another way, every colour that a cinema camera is capable of capturing.

There's an improved processor this year — AiPQ 3.0 over the previous 2.0 — which continues the previous 12-bit driving of the backlight, and we gather the challenge for this year was make it the light control as linear as possible, with two types of dimming used, one specifically to combat high-frequency flicker. In the final step of processing, dynamic range is controlled as a balance of action between the LCD screen and the Mini LED backlight.

The result is an extraordinary 27 steps of potential dynamic range processing for areas of material mastered to 10,000 nits, though the system is practically limited to 24 stops, partly to limit power use, apparently, and perhaps heat. Besides, that range more than covers Dolby Vision content on Netflix and Disney+, as well as HDR10+ content on Amazon Prime.

The new processor also allows more complex picture processing, including improved content classification and the ability to better separate foreground and background elements (an 'AI' approach, we were told) to apply different processing for, say, faces. Another lift in performance is the ability to have a 240Hz refresh rate for the LCD panel when in Full HD; for UHD it runs to 144Hz.



The new TV is also Calman-ready for professional calibration.

We should say that some of this technical information came from the European EISA briefing, and it's not uncommon for TVs to vary across regions; indeed for some brands that's the norm. The specs here seem to match, and when we asked TCL locally if there were any differences, they said they were "unaware of the European releases so not sure". European TCL certainly doesn't know if the Oz version is different, so we have no way of being sure. But all our review comments relate to the Australian TV we had in for review.

Connections

Looking at the front of the TV, all connections except the power socket are on the right. There are four HDMI inputs, each socket having a different label and capability, so you need to plug the right thing (e.g. gaming consoles, external sound systems) into the right one. The operation manual doesn't even mention this, so here's the info: HDMI 1 is good to 4K/144Hz, HDMI 2 for 4K/120Hz (and so presumably FHD at 240Hz), HDMI 3 and HDMI 4 good to 4K/60Hz with HDMI 4 being eARC-enabled for external sound systems.

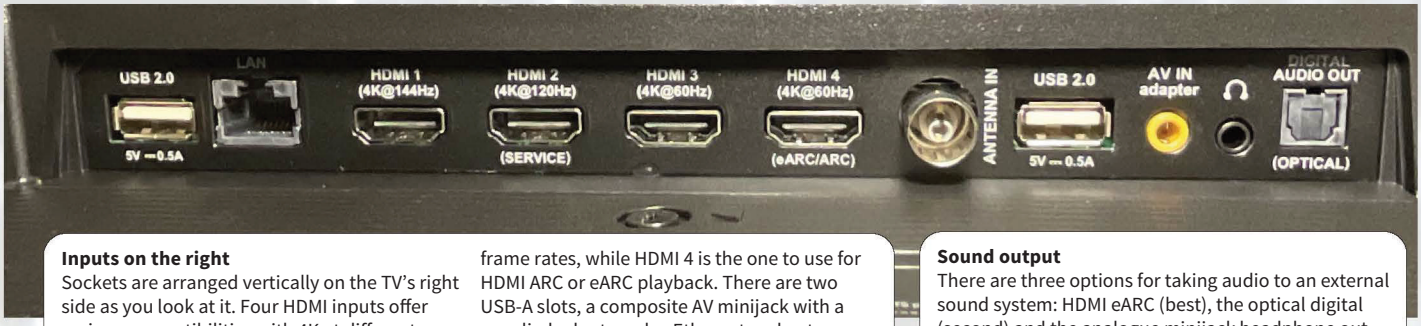
There's a minijack composite AV input with an adapter cable supplied; there are two USB-A slots, a headphone output, and an optical digital output. That's the physical stuff, but of course the Ethernet or Wi-Fi connects to your network, bringing to life the abilities of the Google TV operating system (a variant of Android TV) and all its thousands of available apps, including comprehensive coverage of all terrestrial catch-up services and all streaming services, paid and free.

There is also a 'TCL Channel' with a dedicated button on the remote, leading through to 80+ live channels and quite the collection of on-demand content, a lot of B-level stuff but some goodies too, partly by including Plex inside the TCL content.

There is Apple AirPlay, and Apple HomeKit compatibility too. Some online specifications say it doesn't have Chromecast built-in, but that would be mighty odd for a Google TV, and of course it does.

It is Alexa-compatible, but as a Google TV it'll clearly work best with Google Assistant, especially as the C845 has this capability built in, with microphones both on the TV and available on the remote by pressing the key with Google's meaningless coloured symbols on it.

There are any number of apps in the Google play store for streaming music, but also Bluetooth (and Chromecast and AirPlay) for streaming music to the TV.

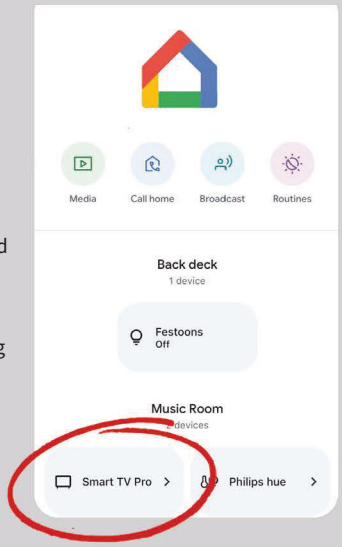


Inputs on the right
Sockets are arranged vertically on the TV's right side as you look at it. Four HDMI inputs offer various compatibilities with 4K at different frame rates, while HDMI 4 is the one to use for HDMI ARC or eARC playback. There are two USB-A slots, a composite AV minijack with a supplied adaptor, plus Ethernet and antenna.

Sound output
There are three options for taking audio to an external sound system: HDMI eARC (best), the optical digital (second) and the analogue minijack headphone out.

Google TV: set-up & settings on the TCL

Once you've turned the TV on, Google TV and the Google Home app take over the set-up process, which is convenient in many ways, if not all. You gain the most benefit if you already have a Google Home, i.e. if you use the Google Home app (right) with various Googlable devices within it. The TV then appears as a device to be set up: you allocate the Home and the Room, and can then share your current Wi-Fi with the TV without all that tedious typing in of passwords. Once joined, you can use Google Home for basic controls, including a virtual remote control.



Here we did experience a downside to handing set-up over to Google Home: it rarely works perfectly. When it got to the Wi-Fi connection, for example, the TV announced it was connected. But the Google Home app said it had failed and we should try again. We had no choice — we had to keep using the app to get through the set-up, so we had to do it again. Happily the second time it worked and we could move on.

Then, after a firmware update — quite long, this, perhaps 20 minutes — the TV asked which Wi-Fi network we'd like to connect to. Well, the one you're already attached to, we replied, the TV having just downloaded an update. When we selected it again, 'ah!' said the TV, 'a stored network', here we go. But it then said it couldn't find it, despite already being on it. In the end we had to select a different network and — yes, had to type in the Wi-Fi password from scratch. So not a lot of time saved there overall…

We were also asked to pair the remote control with the TV, again odd given we'd already been using the remote just fine.

So remember that these things are rarely as straightforward or as smart as they pretend. Persistence and cups of tea get you there.

Finally connected and given all its permissions, the TV began installing apps, some of which were cleverly pre-selectable during the Google set-up. This took another half an hour at least, something we'd say might vary with connection speeds, but we were pulling 45Mbps download speed at the time, so perhaps not much.

Very early during set-up the TV warns you that it has an active microphone onboard, and that it's on. In the manual it says it'll be off by default until you tap the physical 'MIC' switch next to the TV's power button, but they may have changed this default because it's not easy to find, and the manual doesn't tell you where to look. Eventually, after fetching our shaving mirror, we located these controls on the under edge of the TV, to the left of the bottom TCL logo (pictured, with some difficulty, here). The MIC button isn't labelled, but when you flick the switch, a message comes up that the mike is now muted, and the familiar four amber Google 'mute' lights come on above the TCL logo. If you like privacy and plan to have the mike off, these lights will be permanently on, which is just a little bit annoying.

You may be encouraged to mute the mike if you take the trouble to go through both Google's and TCL's terms & conditions and privacy statements before you click Agree to everything; you'll have about an hour of on-screen reading to do, but you'll realise that everything you click, everything you watch, and potentially far more besides, will be noted, stored and will be made available to comply with law enforcement activities, for example, just so you know. We're not saying this TV is worse than any other in this regard, but there was no way to proceed through set-up without pressing Agree, so just be aware that one hidden cost of having a smart TV is that smart TVs report things back to base.

(The other TCL TV we have in residence has a Roku interface. It's brilliant, fast, and perfectly smart, lacking only SBS and ABC apps. We missed its simplicity while using this Google TV.)

Google TV is all about improved recommendations across your services. So it was curious to find ourselves initially served dominantly Disney+ recommendations, even though we weren't subscribed. We started deleting unwanted apps like Disney+ and Prime, but for others, including Stan, we could only 'disable' or 'uninstall updates', or 'Force Stop', the last presumably to escape a stuck app. It was the same for nearly everything else on the initial app list, so we disabled the least useful of them.

That much improved the Home page — recommendations for ABC, 9 and 10, Tubi TV (always some good stuff on Tubi, if not top-res), and once we'd started Netflix and been cleverly auto-signed-in by Google, both YouTube and Netflix shows came up in 'Continue Watching'.

One thing we missed from the Roku interface was the ease of accessing external inputs. We couldn't find a way to get these within the main Google TV home page, other than sometimes temporarily in "Specially for You". So you need to press the 'inputs' button on the remote control to make your selection — or use voice.

Settings can also be accessed from the remote, popping up a box with a few key settings (including Picture), but for the rest you have to press a second settings icon inside the first.

One setting delighted us — audio adjustment which goes both positive and also slightly negative. This is extremely rare, as it requires video delay, a memory-intense activity with the higher resolutions available today. Yet this is the only way to solve most sync issues. Monumental kudos to TCL for continuing to include this potentially system-saving adjustment (below).

Setting up

Putting together the stand was fairly old-school in terms of requiring 10 screws in all — six to put the base together, four to put the base onto the TV. Some TVs are almost screw-free these days, but no problem here — TCL's diagrams were clear and the process straightforward, with the TV dropped flat onto its box, still in its protective sheetings, and the stand extending forward of the TV. It's a flat folding shiny steel central stand here, rather than the little twin end legs that TCL uses elsewhere.

The screws also allow a very nice variation in height, thanks to two choices of screw position on the back of the TV. Use the higher holes and the TV will be sitting nicely low to the shelf, with a compact aesthetic as well as being in the best position for neat cable management down the back of the stand and away.

But if you're planning to use a soundbar in front of this TV, you might choose, as did we, to use the lower mountings to lift the TV a useful few extra centimetres above the desktop: only 3cm more, when we measured it, but that might make all the difference to get above a soundbar.

Once mounted and in position, you can start stripping off the protective film covering the entire panel, plus side and top plastic strips. (It is a *lot* of plastic, but hey, excellent protection.)

"*Tour de France Unchained* looked spectacular; the insane mountain climbs 19 minutes into E04 were breathtaking in their colours and brightness..."

Watching & listening

The picture was immediately impressive out of the box: the kind of visual punch that sells high-level TVs. It launched in Eco picture mode, which we initially switched up to 'Smart HDR'. The luminance was mad, yet never crushing or flaring, but instead supporting crazily three-dimensional contrast and clarity between edges of objects; no apparent enhancement, just pure performance.

It is, really, hyper-realistic. This suits a show like *Formula 1: Drive to Survive* well, with all those F1 primary colours — Ferrari's red, Heineken's green, McLaren's, um, papaya… And that's also a great show for checking motion, of course. As with other TCL sets, whichever 'Picture' setting we chose, we activated motion settings under Advanced Settings, shifting Blur Reduction and Judder Reduction to between 3 and 5.

There's no 'Film-maker Mode'; the 'Movie' mode is TCL's nearest equivalent. For our long-term viewing pleasure, this has more to recommend it than Smart HDR: you don't get quite the bonkers contrast, but it's more realistic, and performs well with all manner of content, video and film sourced — at least it does once two settings are tweaked. First, as with most Film-maker modes, it shoves the tint right down to Warm, and we'd recommend returning that to the centre as a starting point. Second the Movie mode turns off all motion settings, as requested by Tom Cruise *et al,* but really, a little is good, and happily TCL allows you to tweak this mode like any other (some rivals lock this off).

Dolby Vision material, however, will trigger TCL's Dolby Vision modes, four in all, but with Dolby Vision IQ the default; this senses the ambient light conditions and moves to Dolby Vision 'dark' if you are in a

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dark room and Dolby Vision 'bright' if you are in a very bright room.

Such systems can often be compromised by mixed lighting, or a sunbeam on the sensor, but this was the first time we've left IQ running, since the results seemed never to offend, nor to suddenly pump when detecting a change. More good implementation there.

There's also Dolby Vision 'game', which works in a slightly different way, the TV set communicating with the game console, communicating its available specs then getting just pre-processed output from the console, thereby minimising latency through the TV. There's extensive gaming support on this TV.

One picture mode surprised us — 'IMAX'. If you play 'IMAX Enhanced' content, you get IMAX settings (though it occasionally kicked off with other material too). But this seemed just a variation of the movie mode settings.

IMAX Enhanced comes from the same maker as DTS audio, and there is DTS Virtual:X here, available when listening to the TV's own speakers. We gather it's included partly because TCL finds Virtual:X better at virtualising from stereo on their speakers. Dolby content, however, will play in virtualised Atmos.

Indeed the TV's sound system proved quite serviceable for a small room. It's a 2.1 solution branded to Onkyo, the 0.1 being a dedicated bass speaker highlighted prominently on the back of the TV. There are no drivers on the TV to deliver height or width beyond the screen, other than the virtualisation trickery.

So it's still very much worth upgrading the sound. We used the C845 with two other audio systems, firstly one of the company's own soundbars, and secondly a full 5.1.2-channel system headed, at the time, by a Sony receiver. With a full surround system we could further appreciate the C845's high-quality pictures. However the HDMI eARC connection initially refused to send audio to the Sony. It could see it, because it flashed a message up on screen; we selected ARC as the TV's audio output and its own speakers went quiet, but nothing reached the receiver. In addition there seemed some HDMI handshaking conflict; if we selected an input on the receiver to play from, it was immediately overruled by the ARC connection, and we could only force the issue by changing the receiver input repeatedly. The sound issue "fixed itself" a couple of days later (background firmware update?) with the receiver not only playing fine but now identifying the receiver model correctly. But the only way to solve the handshake war was to turn off all HDMI CEC options, which was a shame as it was handy to have the TV remote control working the receiver, and everything turning off with one press.

Back on the pictures, with the tweaked Movie mode in use, the 55C845 simply shone across all kinds of content: UHD *Star Wars* movie action, the vivid flora of ABC's *Gardening Australia*, live Ashes sessions from the UK. And even without the more brilliant picture modes there were some superb Dolby Vision IQ moments where those nits made their mark. The Netflix series *Tour de France Unchained* looked spectacular; the insane mountain climbs 19 minutes into episode four were breathtaking in the impact of their colours and brightness, and yet realistically so, not exaggerated. One byproduct of the brightness is evident on subtitles. This show is best watched with the French soundtrack and Engish subtitles, but the text overlay, presumably full white, almost seared our eyeballs. Some people don't like subtitles anyway; they *really* won't like subtitles that require sunglasses. But no bloom!

Anyway, that's the smallest of distractions from an image which combined brilliance with excellent motion handling and being set-and-forget across a range of material. Nor is there any problem watching on the sunniest of days with ambient light streaming in, given the brightness available here, combined with the TCL's smart settings. Take that, OLED.

Conclusion

And there's more. Add a big USB stick and you have a PVR to pause and store broadcasts. You can have art or photo screensavers. And there's Bluetooth out for headphone listening, even for a Bluetooth speaker or soundbar, given that negative sync adjustment. But the main 'wow' remains that super-bright picture and everything you need to optimise it, or to let the TV optimise itself. Again we say of a TCL TV, it's just hard to believe the quality you can get for the money these days. +

SPECS

TCL 55C845 $1999

Display technology: Mini LED backlit LCD with QD
Screen size: 55-inch
Other sizes: 65-inch ($2999), 75 ($3999), 85 ($4999)
Operating system: Google TV with microphone
Native resolution: UHD 3840 x 2160
Refresh rate: 120Hz (VRR 144Hz/DLG 240)
HDR: HDR10, HDR 10+, HLG, Dolby Vision IQ
Inputs: 4 x HDMI 2.1, 2 x USB 2.0, component AV via minijack and adaptor, antenna in, Ethernet, dual-band Wi-Fi, Bluetooth, AirPlay 2, Chromecast
Outputs: minijack headphone, optical digital, HDMI ARC, Bluetooth audio out
Weight: 16.7/18.7kg without/with stand

Contact: TCL Electronics Australia
Telephone: 1300 738 149
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SOUNDBAR SYSTEM OF THE YEAR

SUMMARY

JBL Bar 1300
soundbar system

+ Breaks apart to deliver genuine Atmos surround from wireless battery-powered rears
+ Detachable rears can be used as Bluetooth speakers
+ Big sound for movies or music
– Large subwoofer to fit in
– Best surround effect requires near side walls

If you search back into those racks of *Sound+Image* back issues all neatly bindered up in your shed, you'll find plenty of reviews of JBL soundbars — but no awards for them. We have judged them solid and competent, but hitherto not exceptional in what is, after all, an extremely crowded market.

That changed this year, with the arrival of JBL's Bar 1300, at the head of a new set of soundbar designs from the brand. The Bar 1300 is the company's largest soundbar and subwoofer combo to date, and also its most ambitious. Its very particular trick is that each end of the soundbar can be removed and resituated at the back of the room, where they instantly become a battery-powered wireless rear speaker, so delivering genuine rather than virtualised surround sound.

Plus each detached rear also has an upward-firing driver, fulfilling duties as Atmos-enabled channels. In this way, the Bar 1300 is able to claim a huge 11.1.4-channel Dolby Atmos delivery.

First impression

We wrote last issue, in *News*, about the impressive launch which Harman Australia put on in Sydney. It was both superficially impressive (held in the glitzy Studios 301, spectacular snacks, etc.) and genuinely brave, because Harman chose to pit its Bar 1300 system against Studios 301's new $200k Atmos mixing suite.

On one level, this might be considered crazy, to have the resident Atmos engineer A-B switching between the full mastering system and the JBL bar, with its centre section balanced atop the system's centre speaker and the separated wireless rears perched on the studio's own standmount rears. There was clearly no hope that JBL's bar would 'win'. But instead Harman scored something of a coup. Of course there was absolutely no chance of confusing one with the other — the full Atmos system was vastly more powerful and spacious and accurate. But the surprise was how well the Bar 1300 did manage: it was not a sad crushing of the Atmos music being played; things remained powerful and musical. Needless to say, we couldn't wait to get the Bar 1300 in for a full review.

The two 'rears' are pulled from the ends of the main bar to operate wirelessly on battery or USB-C power. Each rear can also be used as a standalone Bluetooth speaker.

Build & connections

We had seen several of JBL's latest soundbars at the launch, and TBH they look pretty plain and functional, with flat black plastic areas between the grilled areas covering drivers. As you head down the range, the aesthetics become plainer still as the driver counts reduce and ever more flat black plastic fills the gaps.

But you know what? Who cares. Soundbars should play to the ears, not the eyes, and plain black is just the thing to disappear below your TV, especially as the bar stands just 65mm high off a bench (a wall-mounting kit is also included) and is usefully matte on top, so won't reflect much of the picture above. JBL sensibly opts for no lights on top (because you can't see them when you're seated, not that this discourages many soundbar designers). Instead a useful and large five-character LED display shines from the front through one of the grilles.

How long is the bar? Depends if the ends are attached (138cm long, 6cm high) or not (102cm long). Socketry is generous, with three HDMI inputs as well as the output, which has eARC so it plays your TV audio back down the wire. (And this worked for us even with TVs that often don't like handshaking this way.)

The direct HDMI inputs will be the only way to enjoy DTS:X content, with which the bar is compatible in addition to Dolby Atmos. But there is very little DTS:X content around, and none via streaming services in Australia (Disney has promised some for IMAX Enhanced movies in some regions). Many bar manufacturers are now saving themselves the DTS licence fee and ignoring it.

There's also Ethernet and Wi-Fi here, optical audio as a TV fallback, and a USB-A slot which can charge, say, an HDMI dongle.

Then we have those detachable rears, the Bar 1300's particular magic trick, although it's not unique in this regard — several other bars in the new range and the previous JBL Bar 5.1 can all do the pull-off trick. It's an idea pioneered by Philips Fidelio soundbars going back a decade, though the earliest versions were hampered by battery life for the rears while separated from the mother ship, barely making it through a movie.

JBL told us you'll get three to four hours of full-on performance from the Bar 1300's pull-off pair, though the website is more optimistic, quoting up to 12 hours, which "may vary according to content type and volume level". But there's also a USB-C power socket on each speaker, so you could use any spare USB-C power adaptor to keep them juiced up indefinitely in their rear positions, rather than returning them regularly to recharge from the bar.

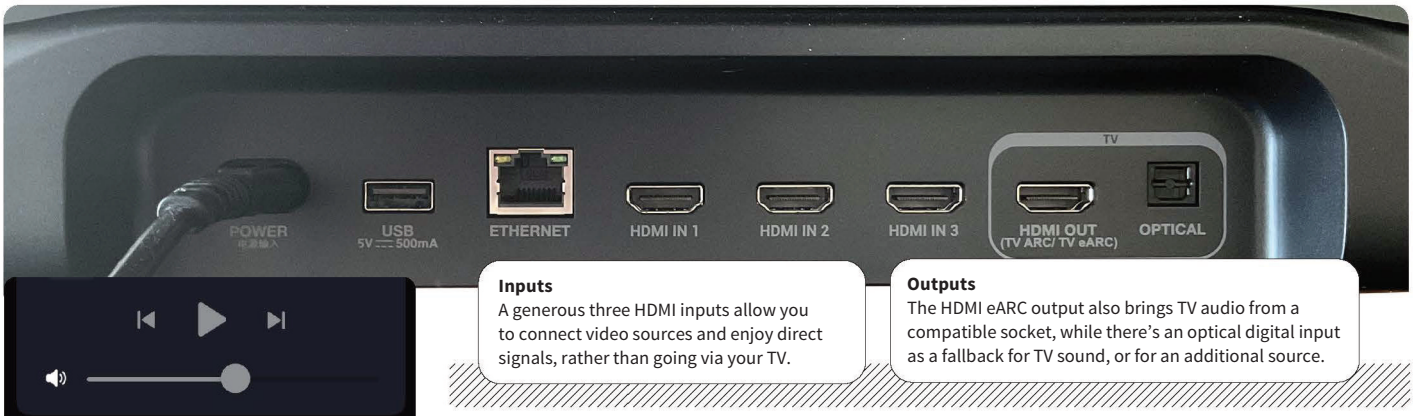
"The soundscape gets frantic, even more so at the death of the God, but the JBL bar kept pace, banging the rocked-up Marvel theme at us from all corners..."

That also allows further freedom, because each rear speaker can individually become a standalone Bluetooth speaker. Plug one in bedside to a USB-C power cable and send it bedtime tunes and podcasts from your phone.

In a nice touch, JBL supplies a couple of magnetic end pieces which can pop onto the bar when the rears are removed. This both keeps things neat and prevents anyone sticking their fingers in the ends where the angled side drivers are visible. You'll need somewhere to tuck these when not in use, but when attached it certainly improves aesthetics.

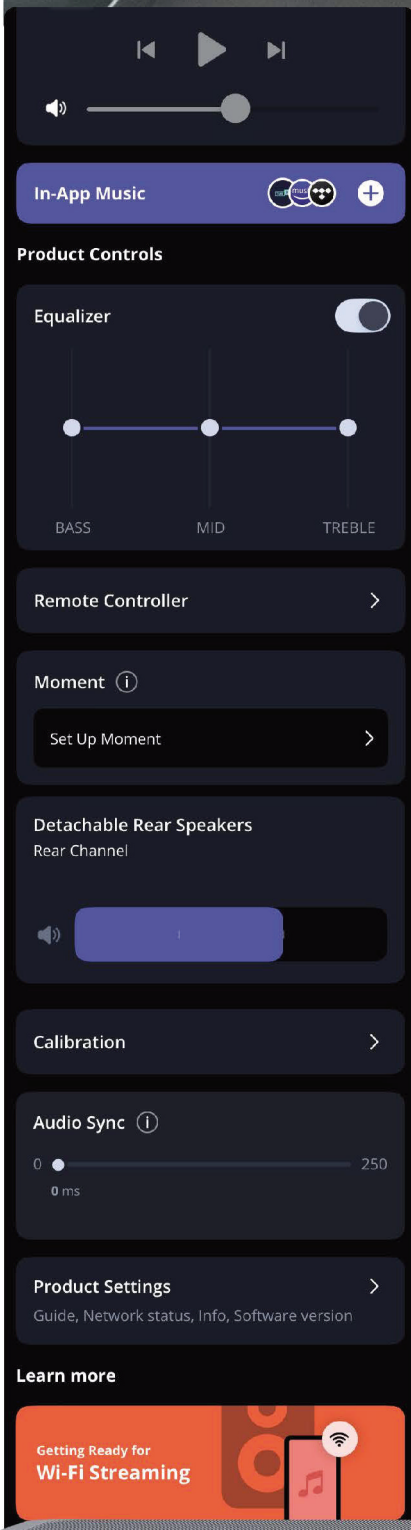
If the rear speakers are clever and compact, the bar's other partner is clever but not very compact at all. Indeed the subwoofer is absolutely enormous by soundbar combo standards, so is perhaps just that little bit harder than usual to accommodate — a 31cm square footprint and 43cm high. It's about the height of a piano stool, so we reckon people are very likely to sit on it, at least until

The subwoofer with the JBL Bar 1300 is its second secret weapon, providing a full sound that allows the bar and rears to achieve a better sense of immersion.



Inputs
A generous three HDMI inputs allow you to connect video sources and enjoy direct signals, rather than going via your TV.

Outputs
The HDMI eARC output also brings TV audio from a compatible socket, while there's an optical digital input as a fallback for TV sound, or for an additional source.



its portly performance resonates their rear regions and they realise their error. In any case the 10kg sub has a sturdy polycarbonate shell, and its thick black feet seem sturdy enough to handle such a scenario. Its back is defined by the flared port and the socket for the power cable, plus a little illuminated press button which can be used to re-pair it with the bar, should they ever become accidentally estranged. The main driver is generously quoted at 10 inches (actually nine to the outer edges of the roll surround); it fires down and out through the space between the feet.

The subwoofer needs its power cable, but it links wirelessly to the bar, of course, and it has none of the common subwoofer controls (roll-off, phase etc.) because all that is taken care of by the bar's electronics, subject to the calibration process.

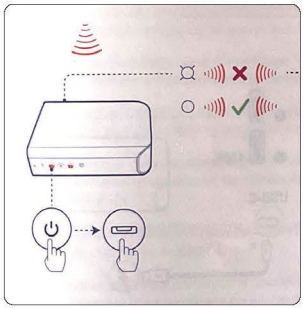
Set up

Set-up was initially a bit of a kerfuffle, mainly because the quick start guide is so short of useful words. JBL hopes that pictorial instructions will be clear to all, without the Babelian confusions of language. So what's this one mean (see below right)? A red cross by a little square, or a green cross by a circle, with an arrow pointing at the back of the rear speaker units. Some words do appear, but in type almost too small for the human eye to discern.

Despite the *#fail* on the Quick Start Guide, however, it's not rocket science (and you can download a full manual). We just plugged up and stuck the rear speakers on the front to ensure they were charged. Soon enough a message appeared on the bar saying 'Connect to WiFi'. This is one of the last things in the Quick Start Guide, which does then point you to the 'JBL One' app. This takes over — you get the Bar onto your home Wi-Fi (or Ethernet), then it offers to calibrate the system to your room.

The question with built-in calibration systems is — where's the mike? There's no plug-in microphone here to move around here, as in AV receiver calibrations. If a bar offers to calibrate based only on a mike in the bar itself, we are dubious how it can discover much about the room, let alone the listening position.

So here we were impressed to discover that the detachable rears each contain microphones, enabling a real triangulation of calibration to occur. It does so using only two sessions — the rears closely positioned at the central listening position, and then placed out in their wider, presumably permanent positions (see left). A couple of minutes of wild whooping and it's all over. Our only issue was that we couldn't find a way to turn the calibration results on and off, for comparison purposes. Once on, it seems stuck on, short of a full reset, or re-calibration.



There are supported music services as well as settings within the app (see long scroll image, left), also a crude but effective equaliser, a virtual remote control (more clearly labelled than its physical counterpart), and an audio sync slider, its adjustment only positive, though, when most soundbar sync problems require negative.

Listening sessions

With the rears popped off and in position, we played *Picard* Season 3 from Prime, delivered

in 5.1 and lighting up 'Dolby Surround' on the bar's LED display. The surround track was immediately effective, steering ships from rear corners to the front, or delivering clinking glasses and chit-chat atmospherics from pub scenes, while the chunky subwoofer kept up the subtle low rumble of space travel and supported the slams of battle with great impact, if not the nimblest tightest of bass control. The disconnected rears were in almost constant activity, and their upfiring speakers also active, which is odd for 5.1, and points to an upscaling technology being in default use.

This was confirmed by playing some simple stereo material, and again it leapt out of the rears and upfiring drivers. We confess this was beguilingly effective with stereo music, and a room-filling rendition of the first Georgia Fair album/EP was one of the first warm-ups we enjoyed on the Bar 1300. Once started, we had no inclination to stop it, so rich were the brushstrokes, so enveloping the sound, despite us knowing the surround effect was being faked.

With stereo TV shows, however, the effect of the upscaling was to throw slices of the front dialogue rear-ward, which sounded very distracting, like they were whispering in our ears. Lacking any button to shut off the upscaling, you can instead silence the rear and 'Atmos' channels using dedicated buttons on the remote. Or just put the rears back on the bar, of course, and reserve separation for true Atmos soundtracks.

We have noticed that some soundbars which handle Dolby Atmos not only perform far to their best with a true Atmos soundtrack, but also underperform with anything else. That is not the case here; we kept the Bar 1300 in position for a full month covering all TV and movie duties and a good few music ones. Never did it offend, and often it impressed.

Yet it is certainly the case that genuine Atmos takes things up a significant notch. Suddenly the signals from the rears were plainly discrete, not artificially created from something else. We watched *Thor: Love and Thunder* from Disney+, which is an IMAX Enhanced presentation with Dolby Atmos sound. As Gorr summons the god-killing Necrosword to kill Rapu in the intro sequence, the whole soundscape gets pretty frantic, even more so at the death of the God, and the JBL bar kept pace, banging the rocked-up Marvel theme at us from all corners.

In fact, we reckon the rears were clearly 'hot' (a little high) as set by the calibration; we had thought the same at JBL's demonstration in Studios 301. Many people like their rears hot — you've paid for them, might as well hear them! But it's not quite the way the artist intended. Happily, as noted, here you can tweak various levels using the supplied remote control (below); the changing levels are shown on the bar's LED display. We dropped the bass to 2, to stop it woofing things up quite so much. We put the rears to medium for atmospheric movies, but with *Thor…* we dropped them back to low, which kept things immersively real, less distractingly busy. There's even a level control for upfiring level; that one we kept high.

So set, the JBL 1300 delivered masses of power, a solid and tight sound, and a strong but realistic level of immersion. In one wide room (see p6) we experienced something of a gap between front sound and rear, but once in a listening room with side walls the side-surround drivers firing at an angle from the bar's edges could do their thing.

When the bar gets an Atmos signal, it scrolls 'Dolby Atmos' on its display. This is usefully reassuring (it had read 'Dolby Surround' in one room at Studios 301, indicating some lesser form, and simply 'PCM' in the other demonstration).

The opening of AppleTV+'s *Tetris* movie provided a wonderful example of the Bar 1300's talents, opening with a rear-left dice rattle from the detached speaker and progressing into an immersively pumping theme which is part Reznor/Ross, part *Everything is Awesome*. Then there's an important dialogue scene and here the surround largely drops away, so you're focused on the dialogue, which remained solid and distinct, then effects lift again as the Russian back-story begins and we move to a street in Moscow with a crack of thunder, falling rain and support music. The regularly-recurring Reznor/Ross-like blips are particularly effective, and this led us into one of the great joys of owning a Dolby Atmos system these days — Dolby Atmos music.

The bar flashed up Dolby Atmos instantly when we set our AppleTV 4K to play Spatial Audio from its Apple Music app, and Atmos music sounded bloomin' fantastic. Some soundbars can do movies but can't hold a tune — this is decidedly not the case with the Bar 1300. It gave the best performance of Fleetwood Mac's Atmos-mixed *Dreams* we've heard: we actually preferred it to our full surround system, so rich were Stevie Nicks' vocals at the front, so enveloping the harmonies spread around the room, and so full and firm the bass (still on the '2' notch, though some songs needed an extra tilt).

Earth Wind & Fire's *September* has plenty of rear action and simply boogied along through the JBL combo, and with a crazy amount of level available — this is a rare soundbar which can really party when requested. We'd noted that JBL's Studios 301 demos had been set to the max level of 32 (or one stop down, after a request to tame things a little), but that had been in a nearly impossible room in which to perform — a dry large studio with high ceilings. In our more realistic lounge environment we only once dared push it to the maximum level of 32; even 22 was crazy loud, so we had plenty of headroom to spare.

One great new Atmos release is boygenius' *the record*; the opening *a capella* piece being a nicely simple demonstration for voices placed around the soundstage, while track 3, *Emily I'm Sorry*, similarly spreads beautifully front to back, a fine advert for listening in Atmos. And there's no listening to this quietly: the Atmos music effect only becomes

▲ We often ridicule pictures like this, which try to show how front-positioned soundbars might try to create a virtualised sense of surround. Here, however, the use of genuine rears and upward-firing Atmos-enabled drivers on the Bar 1300 allows a genuine sense of immersion. Relatively near side walls assist the effect greatly.

more immersive as you raise the level, a slightly dreamlike audio world. If things started to feel a little floodied and swampy, we backed off the subwoofer a stop or two using the remote.

The raunchier *$20* between these two tracks, however, offered an example of where Atmos helps rather less: the mix sensibly keeps the band driving tightly in the front space, and uses the rears to place backing vocals and effects to fill out the stage — but does this add to the livelier jangle of the stereo mix? Streaming Atmos is, after all, perceptually compressed by a factor of 10 to 1; the stereo is far higher quality in terms of bit-rate, and on this track that's loud and clear through the JBL Bar 1300. It's a good pointer to its abilities, being able to discern such differences in source material quality.

So not everything was brilliant; the Atmos mix of The Beatles 'Help!' didn't sound very lively at all, and when playing some of the stuff we know best in Atmos, like the brilliant mix of Rush's *Tom Sawyer*, or Floyd's 'The Dark Side of the Moon', it was obvious there wasn't the precision that's available from a larger system with receiver and speakers; vocal tones aren't quite hi-fi, the bass less tight, the immersion less complete. But that's comparing this soundbar system against a receiver and speaker package that would cost far more than the Bar 1300.

One result of the very large subwoofer in the system is that it can 'pull' a little if you don't have it centrally located; this was evident on the lonely heartbeat that opens 'The Dark Side of the Moon', though its directionality was masked as soon as *Breathe* began. The effects panning and footsteps during *On The Run* were marvellous fun. Here was another recording which encouraged higher-level listening, although here we found some of the sound from the rears (though not rear height) drivers was delivered with a slight peakiness that encouraged us to tame the rears back, even while raising the whole.

This kind of rebalancing on the fly is greatly assisted by those individual buttons on the remote, so that it's easy to get just the right balance for different material quickly. It's also useful when the separate speakers are upscaling less-than-Atmos material; sometimes things just get spread around too much, and we preferred just to lower the rear and/or height levels far down or even to zero; all these things are made easy by the versatile remote.

And that bonus of using the removable rears as separate Bluetooth speakers? We had a little trouble connecting at first; the usual long press to start pairing instead here pairs the two speakers together. It's a short touch to start one (or both of them) pairing. And the sound? They'll be thin and weedy little standalone speakers, right? Well, no! Don't forget that JBL makes the world's best-selling and regularly-awarded Bluetooth speakers, and that experience shows here, with the solo rears sounding solid, full and enjoyable, with a fair degree of level too, so one of them will be great as a little bedroom speaker, say. When we paired the two together in stereo, they were three times as good, the sort of sound you'll get pairing two large JBL Bluetooth speakers, so a tad artificial, a bit pushy sometimes, but strong and enjoyable, and powerful enough for a good stereo performance in a small-medium room.

The only problem we foresee is that family members will be pinching the bar's ends all the time to use in other places — a full movie night may require a hunt through the home. But what a marvellous bonus!

Conclusion

It's highly impressive to find a soundbar system which can go this loud this effectively and still remain musical. Its removable battery rears are not unique but as yet still unusual in not taking over your lounge entirely with speaker boxes and cables, yet still offering true surround and height from behind. It all makes for an award-winning package.

SPECS

JBL Bar 1300 $1999.95

Inputs: 3 x HDMI, 1 x HDMI eARC, Ethernet, Wi-Fi, AirPlay, Chromecast, Alexa Cast, Bluetooth

Outputs: HDMI, optical audio, USB power

Drivers (bar): 6 racetrack drivers (46 x 90mm), 5 tweeters, (20mm) 4 up-firing (70mm drivers)

Drivers (rears, each): racetrack driver (46 x 90mm); 20mm tweeter, 70mm up-firing driver

Driver (subwoofer): 10-inch (see article)

Dimensions (whd): 140 x 60x 14cm (centre section without rears is 102cm), rears 20 x 6 x 14cm, subwoofer 30.5 x 44 x 30.5cm

Contact: Harman Australia

Web: www.jbl.com.au

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Electrocompaniet
ECI 80D
integrated amplifier

Fjord thinking

From up North to our deep South comes this Norwegian amplifier, forged in the fjords over 50 years of power innovation.

SUMMARY

Electrocompaniet
ECI 80D
Price: $5995

+ Fluid and articulate
+ Detailing and soundstaging
+ Well-equipped
– No USB-B or USB-A
– Headphone sockets on the rear (but two, plus Bluetooth)

Rotterdam, 1973: the 44th Audio Engineering Society Convention. Svein Erik Borja, a Norwegian broadcaster and record producer, is watching a Finnish researcher from Philips in Eindhoven, Matti Otala, presenting a paper entitled 'An audio power amplifier for ultimate requirements'.

This was a rather more exuberant title than Otala's presentation made three years earlier — "Transient distortion in transistorized audio amplifiers" — but the focus was the same. Otala had described a distortion that he termed Transient Intermodulation (TIM), now more commonly termed Transient Intermodulation Distortion (TID). This was, he claimed, the reason that amplifiers didn't sound as good as their THD might claim. In the time between the two papers, Otala had set out to prove his theory practically, so that the 1973 convention featured an audio demonstration using an amplifier built by Dutch engineer Jan Lohstroh according to his ideas. The schematics for the amp were included with the presentation notes.

The record-producing Norwegian Borja is impressed. And he remembers that Per Abrahamsen, the frontman for one of the bands he produced, Mojo Blues, is running a little audio company in Norway called Electrocompaniet, doing PA amplifiers and speaker imports from Bulgaria. Borja develops Otala's schematics into PCB designs and takes them to Abrahamsen.

The project takes a couple of years and the arrival of electronics student Terje Sandstrom to complete, but the result becomes available in 1975. It is named "2 Channel Audio Amplifier".

"On the one hand, this was an enthusiast amplifier with a specific sound," Sandstron has said. "On the other hand, it was a wake-up call for the industry."

It was certainly the making of Electrocompaniet. Five decades later the company is still on the west coast of Norway, not only designing there, not only assembling there, but producing all parts and components there, giving them total quality control over their amplifiers.

Modern 'Classic'

And with that context in your mind, welcome to the world of Electrocompaniet today, and the ECI 80D integrated amplifier. It's part of the company's 'Classic Line', though the range includes thoroughly modern models with streaming and DAC abilities — including the ECI 6 DX MKII, a Sound+Image award-winner in 2022 as our Amplifier Of The Year between $10,000 and $20,000.

This ECI 80D integrated amplifier is distinctly more affordable, at $5995. It doesn't have the full streaming onboard, though there is two-way Bluetooth here with SBC, AAC and aptX HD codecs, allowing you both to stream from a device of your choice and to use Bluetooth wireless headphones when you don't want to be cranking your speakers.

Indeed it's brimming with useful features. The input provision is strong, both digital and analogue, including

a moving-magnet phono stage, two line-level analogue inputs, and five digital inputs: three optical, two coaxial, accepting up to 24-bit/192kHz PCM files, though with no USB-B input for computer nor USB-A slot for sticks and files, so no option of playing DSD or PCM files at higher sampling rates.

As for outputs, there's a basic set of multi-way speaker terminals, a dedicated preamp connection for potentially future upgrading, and not one but two headphone sockets — one 6.3mm, one 3.5mm, both of which can be used simultaneously, though they're inconveniently placed at the right of the back panel, apparently a decision made to keep the front panel clean.

Build is nice and solid, a classic Electrocompaniet specialist design, with a big blue LED display large enough for the neighbours to read (and dimmable), and gold press buttons on the black version (a white edition has silver buttons). A remote handset is provided: nicely simple, it reminds us of the early AppleTV remotes, though it's a light plastic thing, nothing like the company's former and blingier ECT3 System Remote.

The power amplifier uses an in-house developed Class-AB circuit; we couldn't find much more information than that; Electrocompaniet quotes 80W per channel into an 8-ohm load, almost doubling to 150W per channel into 4 ohms, and a sparkling THD+N of below 0.005%. That promises to power all but the most recalcitrant speakers to decent levels.

Listening sessions

And so it proved. Indeed the ECI 80D is a wonderfully capable amplifier for the money: unfussy and consistent across the different speakers with which we tried it, from slim towers to price-comparable standmounts.

"It resolves music down to fantastic levels, and organises all the information into a cohesive and musical whole..."

It majors on delivering an open and spacious sound brimming with subtleties. It shone with a low-key album such as 'Found Songs' by Iceland's Ólafur Arnalds, rendering nuanced soundscapes populated by expressive instruments and sounds. It resolves down to fantastic levels, and organises all the information into a cohesive and musical whole.

That plays also to exceptional stereo imaging; with *Mars* from Holst's 'The Planets Suite' the Electrocompaniet layered the sound thrillingly, preventing any sense of clutter or masking, yet doing so within a refined presentation that was free of hard edges, indeed slightly on the smooth and rich side of neutral, though not so much as to affect overall transparency, nor without bite when the music demanded. The larger-scale dynamic shifts in *Mars* were handled well, focusing on insight and sophistication as much as ultimate muscularity and punch, although switching to *Watch The Throne* by Jay Z and Kanyé West (through the digital inputs) proved that this cultured presentation didn't prevent an entertaining and enthusiastic listen. We loved the way it conveyed voices with the tiny details that convey the passion and meaning behind the words. We'd put the DAC module on a level with the best standalone choices somewhere in the $1000-$1500 range.

Vinyl fans can also relax and enjoy the ECI 80D's built-in moving-magnet phono stage, which is no afterthought; it retains the clarity of the line stages, and worked well with everything from Bob Marley's E*xodus* right the way through to Orff's *Carmina Burana*. The headphone outputs are also excellent, their sound just as engaging as the speaker outputs, which is not always the case.

The Bluetooth input was one of the best implementations we've heard in a product like this. Of course, always go wired if you can, but we were genuinely surprised at how effective the ECI 80D's Bluetooth streaming sounded.

Conclusion

The ECI 80D is highly competitive at this price, a well-specified amplifier in which all the key features work really well — which is actually a remarkably rare thing. For higher-res files and network streaming you might add a separate streamer box (Electrocompaniet offers both a streamer and CD players), although the Bluetooth implementation here performed so well, you may be happy with that solution. Meanwhile the main inputs and the Class-AB power here delivered sound quality superior to many rivals and right up with the best at the price. That the ECI 80D gets made from scratch in Norway, rather than rolling off a Chinese production line, just makes it all the more attractive.

Eight inputs, plus Bluetooth
Moving-magnet phono and two analogue line-level inputs are supplemented by three optical and two coaxial digital inputs, plus Bluetooth with aptX HD in (and out, to headphones).

SPECS

Electrocompaniet ECI 80D $5995

Power: 2 x 80W into 8 ohms, 2 x 150W into 4 ohms

Quoted THD-N: < 0.005%

Inputs: 1 x moving magnet phono, 2 x line-level RCA analogue, 3 x optical digital, 2 x coaxial digital, Bluetooth (SBC, AAC, aptX HD), 12V trigger, USB-A (service only)

Digital inputs: PCM to 24-bit/192kHz

Phono input: input impedance 47kohms / 100pF, subsonic filter -3dB @ 14Hz, THD: < 0.001%

Headphone output: load impedance single output > 16 ohms, double output 32 ohms, output impedance 10 ohms, THD+N: < 0.001%

Outputs: speaker outs (1 set), stereo preouts, 12V trigger, 1 x 6.5mm headphone out, 1 x 3.5mm (minijack) headphone out, Bluetooth out

Dimensions (whd): 470 x 90 x 262mm

Weight: 8kg

Contact: Audio Dynamics

Telephone: 03 9882 0372

Web: www.audiodynamics.com.au

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- Dolby Atmos
- PureVoice Technology
- Detachable speakers
- Multibeam Technology
- Standalone Bluetooth speaker
- 10" Subwoofer

dts X.

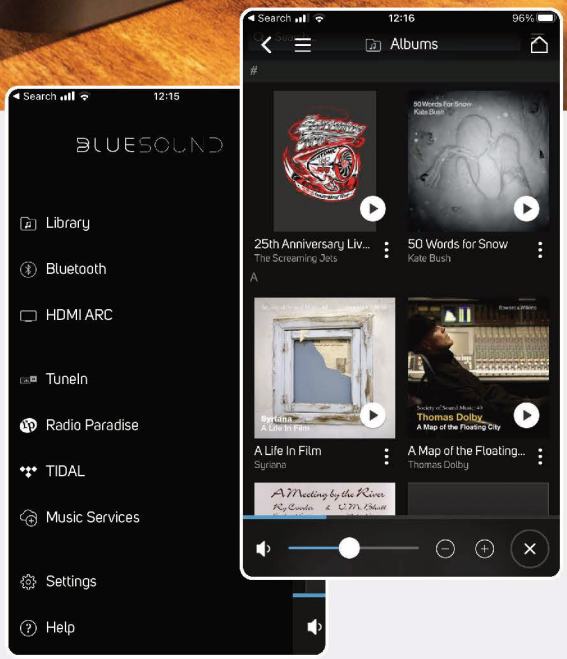
Dolby Atmos

JBL.com.au

Bluesound Powernode Edge
streaming amp / zone player

Going over the Edge

Bluesound's wireless and multiroom platform gets a new member: a cut-down custom take on the Powernode zone player.



Let's get the definition of this clear first, with streamers and multiroom boxes coming in so many guises, as we've seen already this issue in our streaming feature. Firstly, then, this product is part of the Bluesound range, all of which shares the BluOS streaming and multiroom platform, together with its app. So it can stream wirelessly or via Ethernet from the internet, or from your device, or from files stored around your home.

Secondly it is an amplifier, so it directly drives (via speaker cables) a pair of speakers. In Bluesound-speak, that makes it a Powernode, in an ecosystem where the Node is simply a streamer, while the Powernode is a streamer plus amplifier.

But there is already a Bluesound Powernode available, priced at $1649. This is the new Bluesound Powernode 'Edge', and it costs only $1199. So what, as they say, is the diff?

SUMMARY

Bluesound Powernode Edge
Price: $1199

+ Just-add-speakers streamer
+ Full BluOS streaming
+ HDMI input for TV sound
+ Easy to hide away

– Power rating lower than full Bluesound Powernode
– Prices currently quite close

Facilities & build

Power mainly. The full Powernode offers 80 watts per channel of HybridDigital power. The Edge brings only 2 × 40 watts, and the amplification type is DirectDigital (see panel); in this regard it might be considered a Powernode Lite. The two units do seem to be differentiated by quality: you might use a full Powernode for a critical zone, whereas the Edge is perfect for smaller rooms, background music, and particularly whole-house music in the style of custom installation. When we got an EISA briefing on this product direct from the Canadian Lenbrook team, they described it as "pushing the limits of the

The BluOS app has long been a strength of the Bluesound ecosystem, evolving as it went, and we gather that significant changes are on the way, so we're not entirely sure what to highlight, lest it change.

One strength was high-res compatibility from its earliest days, able to play 24-bit/192kHz files over the network, and able to unfold MQA-contained high-res when streaming from Tidal. You can usefully tailor the list of services accessible from the main left sliding tray — which is one thing we think may change, since you do sometimes find yourself sliding bits of the app left and right trying to find your way around.

Also important is that the app forms a library of files on the network or plugged in by USB. A smart library is better than straight DLNA or UPnP-style navigation when it works, but extremely frustrating when it doesn't. We had a bit of both in our time with the Powernode Edge.

sweet spot", which we took to mean that it's pitched just a little above the Sonos Amp, which does much the same thing within the Sonos eco-system. The proper Powernode looks pricey in this context: $1649 against the Sonos Amp's $1099, while remembering Bluesound has always been pitched as a higher-quality system, high-res from the start, more discerning about its power amps, and other stuff.

Lenbrook's Matt Simmonds, the Bluesound product manager, described the Powernode Edge to us as "for first-timers or secondary zones". And also for installation and those wanting to create a more hideaway music system. This is a clear angle for the Edge. It has been specifically designed to hang vertically on a wall (as shown right), socketry down, newly chamfered edge upwards showing the five symbols and indicator lights behind a glass touch panel. It's certainly a neat angle for the Powernode Edge.

▲ WALLFLOWER: The Powernode Edge can hang on the wall or behind a TV, sockets down, for a hideaway zone-player solution.

Some of the tech seems unchanged from the pricier big brother Powernode. The quad-core 1.8GHz ARM Cortex A53 processor and the DAC used are the same. The audio inputs are the same, a pity really as they are excessively minimal: just one HDMI socket, and one combo socket which takes either a mini optical digital or an analogue minijack input. There's an optical adaptor in the box to allow this compromise solution, but it's an inconvenient substitute for a proper optical input; we've never liked these combo sockets that Bluesound uses.

That optical input is good to 24-bit/192kHz, as normal, though that's also the highest file type that can be played over the network, even though the DAC is theoretically 32-bit/384kHz capable. It can't play DSD (convert them to PCM, suggests Bluesound, rather stomping on the point of DSD). BluOS does support MQA rendering, most likely useful if you subscribe to the priciest Tidal level with its many 'Masters' albums in MQA-encoded high-res up to 24/192. Although MQA's future is currently in doubt, and Tidal has announced it will start using FLAC for high-res, it has also said it won't be removing the MQA files any time soon, so the MQA functionality will remain useful for now.

Android users can stream from their devices using aptX HD Bluetooth. And there is also a Bluetooth output (for wireless headphones or to a Bluetooth speaker), again with aptX HD available.

Apple users will be more quality constrained for streaming into the Edge. BluOS doesn't connect directly to Apple Music, so instead you would use Apple Music on your device and select the Edge as the output in the list of AirPlay devices. But one of Bluesound's team was our original source for the shocking revelation that AirPlay 2 re-encodes lossless and high-res to 256k AAC. So no lossless from Apple Music via streaming here. Using cables you could play Apple Music on an AppleTV 4K and plug it in via HDMI to play up to proper high-res.

You can play via HDMI because of the potentially very useful HDMI ARC socket, ready to play back from an ARC-equipped HDMI socket on your TV, and making the Edge (plus speakers) all you might need for a compact and potentially hidden movie and music system.

There's no USB-B for wired computer playback, but there is a USB-A slot for attaching a stick or drive of music, plus gigabit Ethernet as well as Wi-Fi to get the Edge networked, a subwoofer output should you wish to beef up a smaller system, and an IR input for a remote sensor, which may be useful if you've tucked the Edge away on a wall behind your TV or similar.

But what IR signals? As with all Bluesound products the company economises by not including a remote control in the box, though one is available for an additional $49. As usual, however, we forgive them for this because of another commonality of Bluesound products: the ability to learn IR codes. Your TV remote will already control the volume arriving from the TV via HDMI ARC, so we elected to use other buttons on our TV remote to control the Edge (and they'll do so even when the TV is off). We allocated the channel up/down buttons to the Edge's volume, 'mute' to 'mute', and three channel number keys for selecting between its three inputs. It all worked perfectly.

We did this because we very much like physical remote controls. If you're happy to keep your phone or tablet always available, you can do everything through the BluOS app.

BluOS & other controllers

The BluOS Controller app has historically been one of our favourites among streaming systems, for its ease of use and appearance, and also for the way it compiles a permanent library of music on your network shares, rather than simply offering DLNA-style browsing.

Also a huge bonus is the inclusion of software for Mac and PC, as well as mobile devices. This can make it far easier to get the library functions sorted, and also to operate the system if you're using a laptop-based scenario for playback.

The Edge also joins other Bluesound products in being directly controllable over the network from smart home systems like Crestron, Control4, URC, RTI, ELAN and others, while you can also indulge in hands-free control possible with voice assistants like Apple's Siri, Amazon Alexa, and Google Assistant.

Lastly, of course, you can just walk up to the Edge and touch its angled glass-covered control strip. We can't say we're great fans of the revised Bluesound aesthetic — the Edge looks as much like a modem as it does an amplifier — but it's clear, and usefully compact, and during our time became only moderately warm around the area of the top/front grille.

Listening sessions

Early on we were playing with Apple's new classical music service and AirPlayed over a rare recording of Philip Glass's 'Fall of the House of Usher'. It starts with stage narration, nicely placed in a clear acoustic, but once the full ensemble kicked in, we were pleased to note no sense of the Edge underfunding the required performance with its reduced wattage (we should note, though, that it is also *different* power; see panel overleaf). The rhythmic tambourine here sounded suitably shimmery, held above the main ensemble with the hall acoustic open and obvious.

Such resolving powers also speak to reliably musical conversion in the Edge's DAC. That 24/192 limitation? More than enough in this context; higher-rate conversion would do little but waste energy.

Similarly there felt sufficient power for enjoyable performance, with no sign of dynamic compression from under powering, nor really in this case of the 256k limitation (short of attaching cables and a DAC to your phone) that Apple has placed on AirPlay 2 playback, other than some glitches in playback (see below).

To ensure full-quality files we switched to network streaming, playing from the library BluOS builds from attached USB drives and networked music files. Accessing such

New power
The new Powernode Edge is rated at 40W per channel, half that of its pricier sibling. But it's also a different kind of power —see panel overleaf.

Physical inputs
Not many — the useful HDMI ARC from a TV, a combo minijack analogue/mini-optical socket, a USB-A slot for sticks/drivers, and that's your lot.

Other ways to play
But on the non-physical side there is solid network streaming, app-based music services, Roon readiness, AirPlay 2 and Bluetooth with aptX HD.

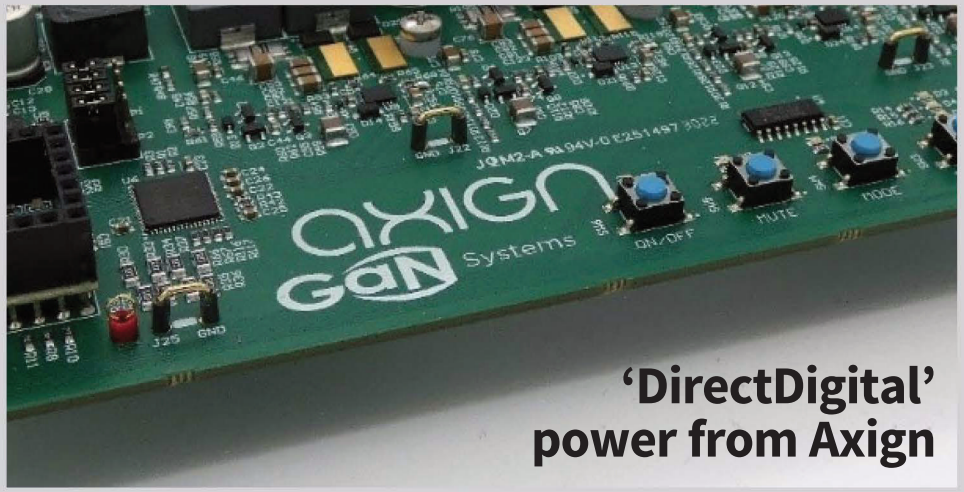
networked music can require some entering of complex network paths, especially for those using iTunes/Music on a remote Mac, but it can be done, and the easy way is to use the BluOS software for Mac, because then you can just pick a folder on the Mac, allow BluOS permissions, then sit back to let the Library populate. We'll also mention that when we've had troubles in the past, Bluesound has offered excellent consumer-level help both locally and via the company's excellent FAQs and Q&As online.

We were soon streaming high-res favourites from a Mac Mini to the Edge, playing into some high-quality German standmounts of entirely average sensitivity. We began delicately, enjoying the fluttering piano and soaring soprano of Kate Bush's *Snowflake*, for which the Edge's lesser power gave nothing away in portrayal of the atmosphere and pinpoint soundstaging of this album, and complete clarity on the in-the-room upfront vocals shifting between by Kate and her son Albert.

For rather more energy we selected Yes' 'Fragile' album at 24-bit/96kHz, nudging the volume for *Roundabout* with our TV remote. This performance retained clarity but lacked the punch and impact we've enjoyed from these remasters elsewhere. When pushed to power up the most complex sections to high levels, the Edge sounded first a little confused on timing, then simply flattened out, as if it simply lacked headroom for further oomph.

With Yes being the classical music of rock, we turned to the genuine classics, momentarily hampered by BluOS's composer list being ordered by first name rather than last! So when looking for Holst, we found Berlioz instead, and settled into to the 'Symphonie Fantastique' recording by Sir Colin Davies and the LSO. Again the Edge did fine with the simpler and quieter sections, even able to punch out a head-lifting transient bang from lower-level sections. But again as instrumentatation ramped up the complexity, the relative headroom declined, so that climaxes were shorn of some excitement.

Next to track names in the Library listing you can right-click to get either 'Info' or



‘DirectDigital’ power from Axign

So while the bigger-brother Bluesound Powernode uses HybridDigital power, the new Powernode Edge uses DirectDigital. These labels both refer to amplification as provided by Bluesound’s sister company NAD, which gets its *quid pro quo* on the deal by using BluOS streaming in increasing numbers of its own smart amplifiers. So when considering a Bluesound system, remember you can consider not only Bluesound’s own products, but also NAD BluOS products, as well as the few from other brands (PSB Speakers’ Alpha iQ streaming speakers, for example, and some options from DALI). They will all interconnect and work together under the BluOS app.

NAD has been a pioneer in non-Class-AB amplification; we hesitate to say ‘digital’ amplification because HybridDigital, for example, is not ‘digital’; it harnesses Dutch company Hypex’s innovative UcD (Universal Class-D) technology, which despite its name is a switching analogue amplifier where each driver and output stage has such low open-loop distortion that the whole circuit is able to achieve self-regulation.

Adding an additional final control loop to UcD created Hypex’s higher-level ‘nCore’ amplifiers, and this is a distinction worth noting, since NAD’s lower models use UcD amplification, while those in its Masters series use nCore.

The Powernode Edge uses neither of these, having instead ‘DirectDigital’. This was the very first name given by NAD to its non-Class-AB technologies, and was originally sourced from a British semiconductor company called Zetex, now Diode Zetex and owned by Qualcomm. That was, and remains, a Direct Digital Feedback Amplifier (DDFA) circuit, where PCM digital signals are converted to (originally 3V) pulse-width modulated (PWM) signals — pulses of fixed height but varying width, as opposed to fixed width but variable value. The PWM stream can then be amplified directly by FET transistors up to ±50V, before passing through a rather critical tuning filter to drive the speaker outputs — pretty much directly, as the name suggests. This “reinvented feedback”, as the engineers put it, delivers closed-loop digital amplification, sometimes described in simple terms as a computer-controlled DAC which also amplifies.

But in the Edge this is not a Zetex/Qualcomm circuit; it comes instead from Axign, another Dutch company which is pioneering a new level of DDFA amplifier. Bluesound’s Matt Simmonds describes it as “not the same platform but an extension of it”, and the performance is certainly improved on paper, Axign claiming 6dB (two extra stops) of dynamic range and a five-times lower THD+N figure (0.001% for the amp module itself) over “other” DDFA providers.

There’s a growing market buzz around Axign, especially after CES 2023 when it collaborated with GaN Systems, leaders in Gallium Nitride (GaN) power transistors, to show a heatsink-free module (pictured) capable of 1000W of hi-fi-spec power into one ohm or 2 x 500W into four ohms, and claiming 97-98% efficiency. If NAD and Bluesound decide to stick with Axign, there could be some well-priced cool-running monster-power options on the way from them in the future.

Technical Info’. The former disappointingly led to a blank page on last.fm; the latter opened a panel confirming the 24-bit/48kHz recording. BluOS currently just displays ‘HR’ on any high-res tracks in your library, but you can also usefully filter either the ‘albums’ or ‘songs’ listing to show only CD quality, or HR, or MQA-encoded tracks.

We like also that you can delete the upcoming BluOS playlist without cancelling the currently playing track, something many other systems could learn from!

Only hours later, however, our Library fun was curtailed. The Edge refused to play anything from our shares, declaring “Host is down”. Given we were running the software on the same machine as the files, this was mystifying, yet persistent. The ‘Library’ option disappeared, busy reindexing. We never reconciled this issue, which shows the dangers of this approach over straight DLNA access — an indexed Library is great if it works, hard to deal with when it doesn’t.

We should mention that any or all of this may soon change, as we gather BluOS’s app and perhaps software are soon getting a radical update. No bad thing, after so long, though we very much hope they keep the desktop software options.

We also used the Edge to play from our TVs using HDMI ARC. This was as simple as plugging the HDMI cable between Edge and TV, selecting HDMI in the BluOS app, and making sure the TV knew to output to HDMI ARC. With a TCL Roku TV, this was near-instant (as is everything on Roku), the only surprise being that the level was about 12dB up on networked music; we had to rush to get the app open to bring it down again. A Samsung TV needed a little more cajoling, but got there. Using a decent amp like this and some nice speakers will transform any TV’s built-in audio, and bring more hi-fi quality than almost any soundbar. It makes the Edge an excellent ‘zone’ solution for all entertainment needs.

Conclusion

There’s not much more to tell, especially if you already know how the Bluesound Powernode works — this Powernode Edge works absolutely identically, but is more hideaway and has the different amplification type.

This ‘lesser’ version is not only well-priced to compete better with the more mass-market incumbents of the streaming and multiroom market, it gives remarkably little away to its higher sibling. The physical inputs are similarly limited, but the streaming, multiroom and processing abilities are the same. We wish we’d had a full Powernode to play alongside, to be sure of the differences. (Also, check street pricing, as the difference between the two can be much reduced, which might persuade you to invest in the higher-powered model.)

What we can certainly say is we never felt shortchanged by the Edge in terms of quality, only in ultimate power provision, so that we wouldn’t recommend it to those who want to be critically listening to complex or high-energy works. But for more background areas and secondary TV rooms, then Bluesound is offering a way to save money over the Powernode by instead going for the Edge.

SPECS

Bluesound Powernode Edge $1199

Inputs: HDMI ARC, combo minijack/mini-optical, USB-A, Wi-Fi/Ethernet, BluOS music services & multiroom, AirPlay 2, Bluetooth with aptX HD, IR in

Outputs: speakers out, subwoofer out, headphone out, Bluetooth with aptX HD

Quoted power: 2 x 40W (8 ohms, 0.008% THD+N)

Supported audio formats: MP3, AAC, WMA, WMA-L, OGG, ALAC, OPUS

Supported hi-res audio formats: FLAC, MQA, WAV, AIFF, MPEG-4 SLS

Dimensions (whd): 219 x 44.5 x 193mm

Weight: 1.37kg

Contact: Amber Technology

Telephone: 1800 251 367

Web: www.ambertech.com.au

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Sennheiser HD 660S2
open home headphones

Open house

The new Sennheiser brings a new HD 600 'S2' version. What's changed, and is it worth the price difference?

One thing we usually don't like to see on a box of headphones is that gold logo for Hi-Res Audio (right), which is granted by the Japan Audio Society. When it appears on wireless headphones, it's a semi-furphy, because wireless headphones can't do high-res audio — it's too data-heavy for even the highest Bluetooth codecs, as we keep mentioning.

Query the logo in those cases, and the company in question will reply that if you plug in the cables, then it does high-res audio. But that should be made clear on the front, next to the logo, not only when someone rings up to ask.

But with Sennheiser's HD 660S2, we have no such worries, because they're for cabled use only, so they can be high-res all the time. And you know what? It's a delight to jettison the buds and the enclosed street noise-cancellers, and to come back home to the luxurious sound of a good pair of cabled headphones like these.

Design & features

So facilities here — well, with no active electronics and cabled operation, not a lot! No buttons to press in magical combinations, no app to download, no voice assistant, no personal tuning or EQ. The only extras in the box are the soft fabric case with a drawstring, and three cables — or two, really, plus an adaptor. And the soft case is actually a downgrade on the big hard case in which the previous HD 660s were nestled, and the cables are shorter than on the original HD 660, but still attach to both headshells and are easily replaced or switched between the full-size quarter-inch (6.3mm) jack and the 4.4mm balanced jack. Then there's that adaptor cable, which takes you from the full-size jack to phone-type minijack. We gather there's also an optional cable terminated in an XLR-4 plug, should you need one.

So it's just a case of attaching your cable of choice, and plugging them in. As such Sennheiser doesn't even bother with a Quick Guide in the box, let alone a full manual; there's a multi-folding multi-language sheet labelled 'User information' but it contains only the warnings the company feels it must legally include, telling you they don't accept liability for damage arising from abuse or misuse of this product for any application not named in the corresponding product documentation. Mind you, since the company doesn't deem it necessary to include such documentation, with nothing saying how you *should* use them, such a definition of mis-use might be considered non-binding at best.

On the back of the box is a QR code to an 'Online Quick Guide'. Unfortunately Sennheiser has geolocked its various sites, so Australians can't visit the linked URL — it instead redirects you to Sennheiser Hearing's Australian page for the product, and you'll need to scroll down to find the link to the 'Quick Guide' at the bottom. (What is listed there as an "instruction manual" is just the multilingual product warnings sheet again.)

We always think it's a shame when companies these days include documents which cover their corporate stuff before including documents that help out the customer. A mark was docked for that here.

But the headphones themselves remain gorgeous. The general look is the same, so that through the outer grille of the headshells, the rear of the driver is visible, but perhaps surprisingly it is now a smaller driver: 38mm, down from 42mm in its predecessor, though with "refined" aluminium voice coils that are now even lighter than the previous "extremely light" versions. The lighter voice coils may be responsible for the doubling of quoted impedance to 300 ohms, so the new headphones will benefit still more from provision of power from a dedicated headphone amplifier, or at least a good-quality amplifier headphone socket.

The usual goal of lighter voice coils and the consequent increased impedance is to reduce distortion, but here THD is quoted at 0.04% with 100dB at 1kHz, exactly the same as the original HD 660, though it may vary differently across the frequency spectrum. Sennheiser points to another benefit instead — improved impulse response, so either a more rapid reaction to or a more rapid recovery from impulses and transients; this is one of the gifts of open-backed headphones in general, and feeds into all manner of benefits from speed to texture to soundstaging.

The company says that airflow around the transducer has also been improved, which could assist this further, although the outer grille seems, to our recollection, more rigid and less perforated than the original (fewer holes and more substance between them), which you might think would reduce air flow where the waves meet the outside world.

One final difference: with medical company Sonova having taken over Sennheiser's consumer division, the company is now officially but somewhat variably called Sennheiser Hearing (on the literature it says Sonova Consumer Hearing Gmbh), and the new headphones are being made in Ireland, though we gather the design team has yet to be ejected from Sennheiser's own HQ in Germany, Sonova electing to leave them there rather than start again elsewhere.

Fairly minor changes, then: what's to hear?

Listening

The Australian webpage for the HD 660S2 has a frequency response graph measured using a head-and-torso simulator, comparing the original and new 660 models. It shows that the bass has been lifted, primarily by reengineering the transducer surround to lower its resonant frequency (from 110Hz in the original HD 660S to 70Hz here), while the treble is smoothed of a few peaks and dips. So there's a little more warmth, not that we'd thought the originals to be bereft; we had complimented how they kept even overwhelming bass lines in check with clarity and a complete lack of overhang.

That's still true here, but material that may have come over a bit light on the originals now has some more warmth in support and a slightly brighter feel up top, good at moderate levels but perhaps a tad intrusive when up loud. But don't expect head-buzzing bass — there's no extreme 'push' in the bass whatsoever; indeed we've rarely heard a 20Hz to 200Hz sweep sounding so perceptually flat. Even when we loaded up some Tyler, the Creator to fill them with phat stuff, *Dogtooth* was kept under restraint, and the mad three bass notes under *EARFQUAKE* failed to shake them to the very depths. Accurate this may be, but they're not for those seeking street-style bass fun.

These headphones will far better suit those seeking purity in relatively acoustic music. We were spinning Tom Waits' 'Asylum Years' compilation on vinyl, and the Sennheisers really opened up the duet with Bette Midler, *I Never Talk To Strangers*, making it delightfuly wide and high, with Bette and the sweet strings left, Tom and tinkly piano right, every detail lifted into its space, so that we were listening almost on tippy-toes until the last breathy drop of Frank Vicari's sultry saxophone faded away.

Long listening sessions were in this way encouraged. When we first donned the HD 660S2 we thought the pressure they exerted to be significant, and wondered about long-term comfort. But we needn't have worried; we barely noticed them thereafter, and never reached a state of listening fatigue from the fit, and once we did the thing where you walk off forgetting you have wired not wireless headphones on, yanking the plug alarmingly from the socket two metres behind us.

These headphones perfectly combined the full electric bass of Little Axe's *Blue* with every click of Skip McDonald's multiple guitar tracks and the fizzy high-frequency flanging of a high synthesizer. Venue acoustics are thrillingly revealed around chamber and concert hall recordings. Diana Krall's voice drips with honey, her piano is impeccably toned. Rapture after rapture.

Conclusion

We have no reservations in celebrating the top-notch audio delights of these fine headphones. The slight bass lift aside, though, we might not call them a black-and-white improvement over the previous HD 660, and some might even prefer the slighter tamer treble of the originals, especially for high-level listening. Sennheiser in Australia were listing the originals at $699, and as we write at a much reduced $499, including that nice hard case which is now no longer included. Stocks may be low and the price may not be held, but in this current scenario the originals at $499 would easily be our value pick over these at $950. But if you want the latest and greatest, feel free; they are gorgeous.

SPECS

Sennheiser HD 660S2 $949.95

Type: open, overear, dynamic, cabled

Driver: 38mm

Impedance: 300 ohms

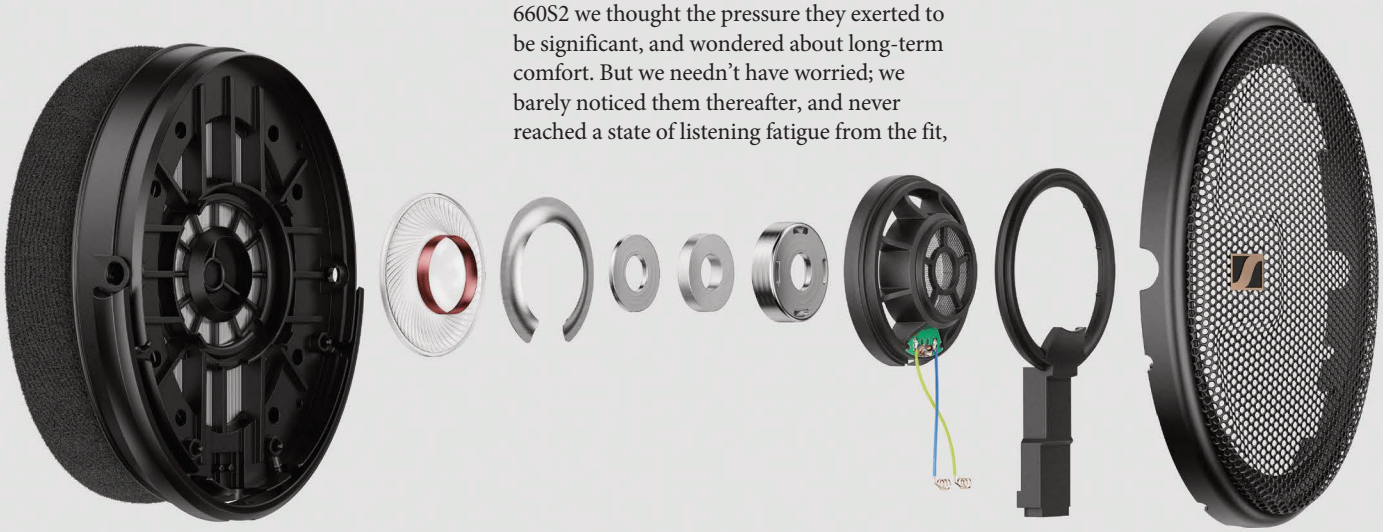
Cables: 4.4mm balanced, 6.3mm (quarter-inch) plus flying adaptor to minijack,

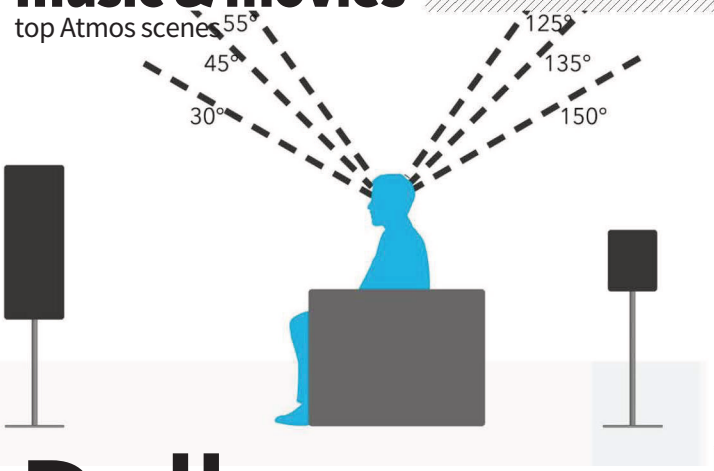
Weight: 260g

Contact: Sennheiser Hearing

Telephone: 02 9910 6700

Web: www.sennheiser-hearing.com/en-au





Dolby Atmos
top demo scenes

To test your Atmos-compatible gear, or just to thrill your ears, here are some great scenes to track down online (check it's an Atmos stream, of course), or even better, to invest in a disc copy, for true uncompressed Atmos action. Got a favourite scene? Let us know!

DUNE (2021)

The sandworm reveal...

To help ground its complex plot and surreal visuals, *Dune*'s sound design is used to construct a believable world that the audience feels part of, and protective toward. It's a carefully-sculpted sonic world, deeply rooted in authenticity, delicately engaging the audience with a sense of intimacy as much as scale. For this scene's Ornithopter flight, the sound team manipulated organic insect and feline sounds for the purring of the dragonfly-like aircraft flying high above the desert. With the giant sandworm's arrival, Atmos is used expertly to create the stunning sensation of the craft dive-bombing deep into the sandstorm.

What follows is an incredible, all-encompassing sonic cocktail of moaning desert winds, tinkling granular dust, colossal monsters and glitching ethereal voices that flow in succession across a dynamic range that stuns. There's very little dialogue, but the storytelling is clear and compelling, while Hans Zimmer's magnificent score adds even more layers of texture and emotional punch, and is pulled around the space in a way that integrates, rather than dominates.

BELFAST (2021)

The opening scene.

Belfast's sound team isn't always literal with the soundscape here, giving subtle hints that we are hearing through a child's ears. Voices of authority figures are pitched down to appear scarier, and unrealistic effects that 10-year-old Buddy would have heard only in films are sometimes used, such as the Western-style train in the opening scene. The lack of a traditional score opens space for sound effects and dialogue, weaving a rich, hyper-real tapestry that bubbles around Buddy.

As he heads home, he clocks the familiar sound of a train. Something is amiss though, and as the camera tracks around a bewildered Buddy the noise of the train evolves into swirling, slow-motion noises of rioters, melding with an expansive undulating low tone that fades down into Buddy's breath before anarchic violence bursts out from all sides, raining rocks overhead. The composed mixing of this scene keeps the chaos cohesive, helping the audience access both the narrative and Buddy's confusion without explicit explanation.

NO TIME TO DIE (2021)

The chase through Matera.

In the spectacular chase through the Italian town of Matera, there are plenty of wonderful details to be found from a Dolby Atmos system. After swinging off a bridge and flying into the air on a motorbike, there's a moment towards the end of this scene where a rain of bullets heads for the Aston Martin while Bond, thinking he's been betrayed, belligerently sits inside with Madeleine. It's exquisitely rendered in the Atmos hemisphere from both an exterior and a cocooned interior perspective, interwoven with the vertiginous sound of the village's relentless church bells. As the shots are fired, each concise crack and crunch varies, keeping the relentless onslaught dramatically interesting until the sound of crystals fragmenting hints to the audience that the car, like Bond himself, is not indestructible.

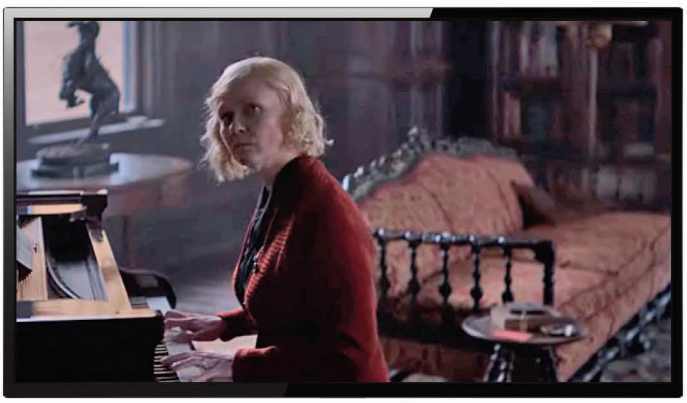
The sound of *No Time To Die* supports the film's larger-than-life visuals and hits all the beats a well-versed audience demands, yet it is still bursting with original, narrative soundtrack work.

THE BATMAN (2022)

The Batmobile chase.

Drawing its cinematic aesthetic more from 2019's *Joker* (by way of '70s noir) than previous Batman outings, this offers us a grittier, grounded, and more expressionistic Gotham. With a Dolby Atmos system, the outstanding sound design lets viewers dip in and out of the characters' perspectives, intensifying the dramatic suspense and thrilling action.

Dolby Atmos is frequently used to create breathing room within the dense soundscape, allowing the heavy, liturgical score, rich tapestry of effects and hushed voices to co-exist without competing. Nowhere is this better demonstrated than during Batman's pursuit of the Penguin. The Batmobile rips through the middle of the soundfield while passing trucks, falling crates and sheeting rain bombard the viewer. But, the narrative of the sequence remains thrillingly clear, even with the persistently building music, guttural gunshots and spectacular sub-bass. From the car interior to the bumper to mid-air vehicle flip, every possible plane is wrung out of the speakers to exhilarating effect.



THE POWER OF THE DOG (2021)

The duelling banjo...

A particularly stark and minimalist sound design reflects the isolating impact of the Montana landscape while Dolby Atmos is used to subtly heighten the emotional stakes in this stifling setting. Signature sounds are used almost as *leitmotifs* to represent the repressed characters' emotions. The film opens with hyper-macho bully Phil striding across the ranch, and the sound of his weighty boots and ringing spurs indicate his strength and domineering presence.

As Rose practises the piano so she might later impress her new husband's dinner guests, Phil plays along on his banjo, deliberately trying to put her off. It's an incredibly intense scene to watch, but with a Dolby Atmos system we not only see but feel his cruelty from Rose's perspective. Atmos is used to locate Rose downstairs and the banjo in the rear corner of the roof. The mix pinpoints his location as he roams around, expanding to fill the ceiling, giving the audience the impression that his taunts are now occupying all of Rose's thoughts before the sound of his boots shocks Rose and brings the drama to a head.

THE MITCHELLS vs THE MACHINES (2021)

Mall of the Globe.

The film's animation mixes 2D and 3D watercolour styles with overlays indicating Katie Mitchell's "director's" point of view. This, when combined with the punky Dolby Atmos soundtrack, creates a captivating adventure caper full of dramatic flair and just the right amount of sincerity (as well as big-tech satire). In the 'Mall of the Globe' battle sequence, where consumer electrical products turn violent, there's a wealth of unusual and zany height elements that only a Dolby Atmos system will reveal. From a soda-can missile that whips overhead crackling with lethal transients, to whizzing drones, to a raining army of kamikaze Furbies, the sound design maintains coherence within the chaos, and perfectly preserves the sparkling script's insightful humour.

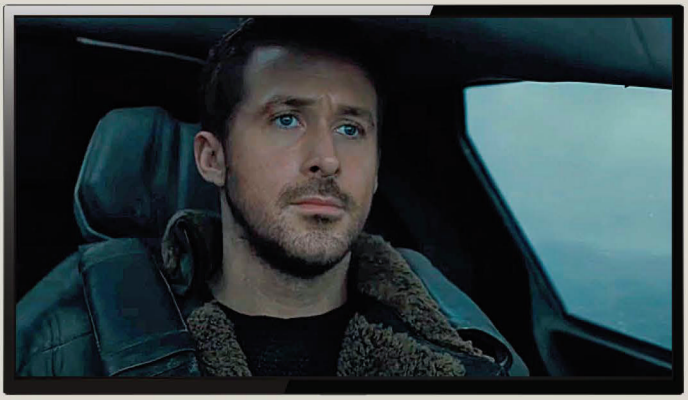
There's also great dynamic range: the gradual crescendo from the first lone killer Furby's laugh quietly reverberating up above to the supersized Godzilla Furby's climactic entrance is an exemplary display of building excitement and anticipation through sound design.

GRAVITY (2013)

Drifting in space.

This used to be our go-to 3DTV tester, but even in 2D the Oscar-winning Dolby Atmos mix helps the viewer find focus within the confusing geography of nothingness as Sandra Bullock hurtles through the vacuum of space, yet heightening the disorientation. In a film where becoming untethered is a constant threat, the sound team set the dialogue free from the centre of the screen to track with the actors.

As Bullock tumbles, we hear George Clooney's radio communication follow her terrifying trajectory. The placement of voices is brilliantly convincing, but it's not just the voices — the entire score is composed for Atmos, moving and swelling with the action. With little ambience, the surrounds are used effectively to show changes of space. The camera zooms right inside Bullock's helmet, and sonically we join that space for the first time — the air, breath and tinnitus More dynamic is a later scene where a fire burns overhead until the airlock is shut, damping everything before more deep thuds from above. A unique Dolby mix.

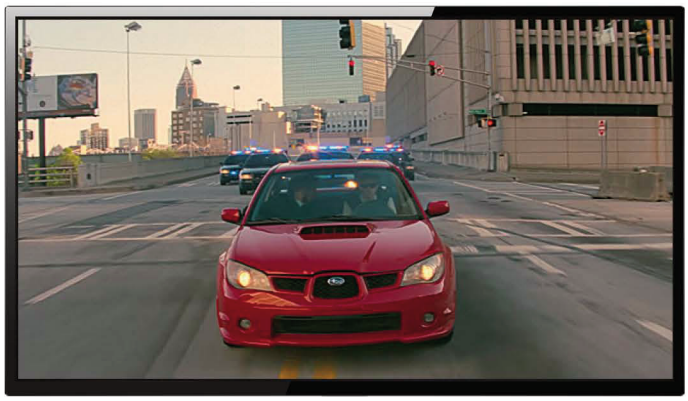


BLADE RUNNER 2049 (2017)

Flight to the orphanage.

As K and Joi fly out of LA, the soundscape transitions from loud — the waves crashing against the flood barrier — to eerily quiet as the rain hits the windshield wipers, with occasional clearly projected dialogue. While the storm batters the car, low distant rumbles of thunder become a more constant barrage. Bullets fired from below streak across the room and the music builds again, with more menace. When lightning plunges everything into near silence as all power is lost, all that is left is the sound of the rain.

These sonic contrasts are challenging. Every dynamic shift needs to be handled confidently so that every dramatic point is delivered. Reinforcing the effects is the soundtrack's sonorous, undulating bass. As with the first film, sound is embedded into the score, blurring the lines between effects and music for a sonic landscape full of tonality, motion and texture. It's the music that gets the most Atmos treatment; using the surrounds for big, intense moments prevents the image from ever narrowing, with both image and audio maintaining an epic scope.



BABY DRIVER (2022)

The getway.

Getaway driver Baby suffers from chronic tinnitus and listens to music in his headphones to alleviate the ringing in his ears, creating a soundtrack to everything he does. The audience hears the world as Baby hears it, and that point of view is set up brilliantly here. We first hear a growing high-pitched ring that morphs into a sustained string note that shifts seamlessly into the braking sound of a car. Then Baby hits play on his iPod, and *Bellbottoms* by the Jon Spencer Blues Explosion starts to play with serious attack; the system bursts to life, giving you a sense of being in a private sonic bubble.

The sound often works in tempo with the music, highlighting syncopated beats. The constant movement and organic realism of these effects prevent the sound design conceit from ever feeling gimmicky or clumsy. As the getaway begins and tyres screech across the soundscape, the car slides about, with sonic integration between fronts and rears tight and seamless. Elsewhere Atmos is used to meld effects and score together as a unified accompaniment that's almost like a musical.

A QUIET PLACE (2018)

Giving birth.

You would be forgiven for thinking a film about the importance of silence might stretch your Dolby Atmos system. In fact, the sound effects here are unexpectedly compelling, making full use of object-based mixing to create a terrifying 3D soundscape. This film is an expert display of carefully controlled suspense, and the dynamic range of the effects is a huge contributing factor as the pervading silence heightens each bare footstep and every rustle in the cornfield or creak of a floorboard. And it's not just delicate sounds that have an impact.

In the scene in which Emily Blunt's character attempts to give birth in total silence, she seeks safety in the basement. The thuds of the alien thrashing around above are captured with ominous weight in the LFE and overheads. As the creature descends the stairs and stalks around, its proximity and movements are palpable. Your ears follow every breath, so much so that when fireworks are finally set off as a distraction, the thunderous explosion releases the tension, for a brief moment at least.

ROMA (2013)

The rescue.

Roma proves that Dolby Atmos has at least as great an immersive potential in intimate films as in blockbusters, where it has the capacity to blur the line between realism and reality.

There's no score here, which frees up the soundtrack to be dense and bold while remaining sincere and specific. The fluidity of Atmos aligns with the slow long takes to give the audience a window into a particular space, and to access the characters and story in a frank and potent way. As the camera pans, the detailed soundscape — birds, dogs, hail, street vendors and even dialogue — joins the change in perspective, drawing the viewer into the frame and producing an eloquent but voyeuristic sense of movement throughout Mexico City in 1970/71.

The film's emotional climax comes as the maid, Cleo, wades into the sea to save her employer's children, despite not being able to swim. The ominous intensity of deepening surf coming ever closer to overwhelming her is powerfully rendered in surround and height channels.

BOHEMIAN RHAPSODY (2018)

The Live Aid performance, of course.

The film's recreation of Queen's legendary Live Aid performance is exquisitely captivating, with sonic options that match every camera angle of this marathon 20-minute scene. Along with the 16-track archive recording secretly made by the BBC at the time, they were able to capture PA ambience with the help of Queen's sound engineers, who played back the tracks in an empty stadium kitted out with 22 mics before a gig. The result of this attention to detail, combined with Dolby Atmos location placement, means that whether the camera is behind the strings of Freddie's piano, in amongst Roger Taylor's kit or jostling in the press pit, the audio perspective has astonishing realism.

The scene opens with a camera flying over the raucous Wembley crowd and a swooping sensation of height and movement. As we move around the stage, we hear the proximity of each amp and instrument; in the crowd, we are surrounded by thousands of chanting voices. Even the long shots from the cheap seats should feel engulfing and transportive, as the crowd gradually begins to sing along to *We Are The Champions*.

MAD MAX: FURY ROAD (2015)

The hunt.

Former cop Max Rockatansky is adrift in a world that's been engulfed by the desert, and haunted by the memories of those he has failed to save. Visually it is relentless, and while you certainly wouldn't call the soundtrack subtle, it is incredibly focused and stunningly layered, directing the viewer while maintaining epic scale.

From gunshots echoing through the desert wasteland and sandstorms tearing overhead, to Max's internal headspace (and his close miked and often mumbled dialogue), this two-hour chase opera boasts impressive dynamism and some exceptional moments of sonic respite.

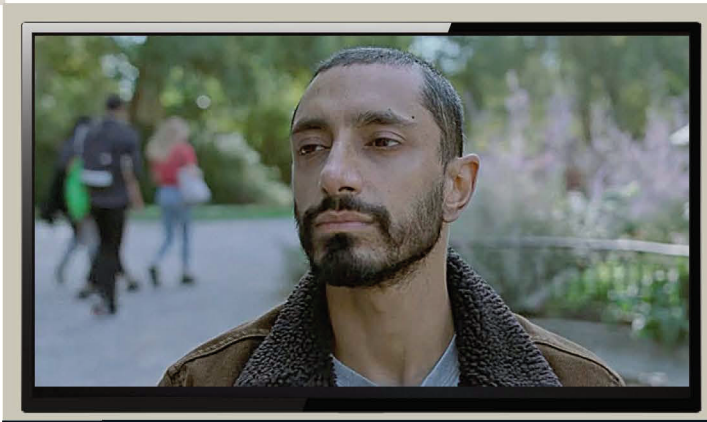
This scene shows how Atmos can help ground even the most outlandish of scenarios. As the cars and their unique engine sounds steer across the soundfield, they are accompanied by Junkie XL's furious orchestral soundtrack. Distorted guitar riffs suddenly flare up whenever the camera cuts to the Doof Warrior and his double-necked, flame-shooting guitar. Angry drums egg the chase on while the strings and electronic beats are carefully woven into the action.

THE TOMORROW WAR (2021)

Time-jumping to 2051.

There's lots of impressive Dolby Atmos action to be found in this hugely enjoyable time-travelling sci-fi action flick with a superb soundtrack (as well as an excellent 4K HDR picture). The scene in which Dan (Chris Pratt) and his even greener civilian squad mates are sent forward in time is arguably the best. Beginning with a quiet, backstory-filling chat between our main man and Charlie (Sam Richardson), chaos quickly ensues as a siren announces deployment.

As the civvies-turned-soldiers line up in a hangar, the portal to the future war fills the ceiling and the soundtrack space above your head with roaring audio — assuming your system is doing its job correctly. There's huge drama and intensity to this build-up that those listening through basic speakers simply won't experience, and the time jump itself is an audio-visual rollercoaster with a spectacularly shocking climax. From this point, the action doesn't let up for what feels like ages, so buckle up, don't worry about the time-jump silliness, and enjoy the ride.



THE SOUND OF METAL (2019)

The final scene.

The Sound Of Metal captures the pain of a musician, Ruben (Riz Ahmed), who is losing his hearing and searching desperately for treatment. So while this movie may not have extravagant soundscapes in the traditional sense, it uses Dolby Atmos to immerse us in a non-hearing world, the realm between sound and vibration. If that weren't ambitious enough, the film reintroduces sound after Ruben gets cochlear implants: a new digital, distorted world. The sound team created 20-30 layers of Atmos from the location recordings on set and separated the soundscape into components — harmonics, noises and transients — before recombining it to create 'Frankenstein sound'.

As cochlear implants do not give a sense of location, the soundscape is modulated to disorientate the viewer. Directionality becomes warped to match how the brain would perceive them. The disorientating synthetic sounds aren't easy to listen to, but rather than alienate the viewer, it draws us in, creating a powerful finale.

BOB DYLAN *Shadow Kingdom*

Not over yet, Baby Blue.

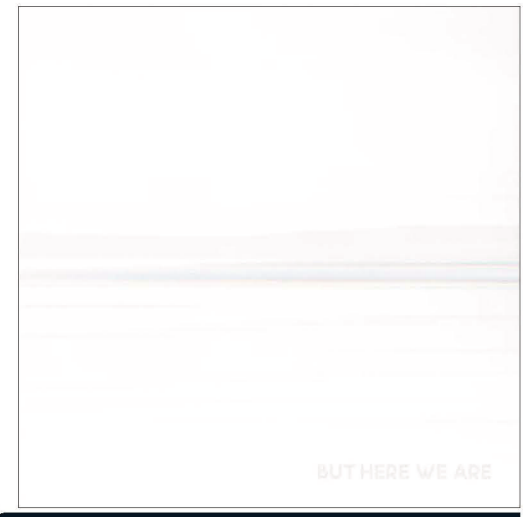
One might wonder why Bob Dylan, who has just turned 82, would still want to be singing *Forever Young*, the lullaby he wrote for his eldest son Jesse that appeared on 1974's 'Planet Waves'. But intimations of mortality can provide a lease of life.

Out of the blue, in 2021 Dylan filmed a club gig in Santa Monica that was directed by Alma Har'el in a mythical bordello setting, an imaginary dive in Marseilles called the Bon Bon Club where indifferent cowboy punters loom like ghosts from an American-noir nightmare, rough but hardly rowdy. That film, subtitled *The Early Songs Of Bob Dylan*, was initially a short-lived stream, although it's soon to be available on Apple TV.

Inevitably, two years later comes the soundtrack. It's an intriguing collection of familiar classics from 1965 onwards, culminating in the instrumental *Sierra's Theme* that allows Dylan's masked-up band a bit of stretching-out time. The actual performance was mimed to lip-sync, so enigmatic on screen but seamless enough here. Being Dylan, lyrics are updated, notably on *When I Paint My Masterpiece* and radically on *To Be Alone With You*. Arrangements are played fast and loose. Janie Cowan provides upright bass, Buck Meek and Alex Burke handle mostly acoustic guitars, and an antique dolceola zither is taken out of its box during *Forever Young*. There's no drummer. Ol' Bob wheezes on harmonica and scrapes the rust off the magnificent *Most Likely You Go Your Way And I'll Go Mine*, *Pledging My Time* and *Queen Jane Approximately*, from 'Blonde On Blonde'. It's not that he hasn't dragged out items like *I'll Be Your Baby Tonight* ('John Wesley Harding') or *Tombstone Blues* ('Highway 61 Revisited') before, but the proximity of such familiars is a delight to hear. The most recent track, *What Was It You Wanted* (from 1989's 'Oh Mercy'), is wondrously stark, and the mid-tempo *Watching The River Flow*, a song that was viewed as writer's block overcome, is an evident highlight in a set that casts a smoky haze over a remarkable event where characters from the shadow kingdom of Dylan's past come out to play one more time.

He'll be a hard act to follow.

Max Bell



FOO FIGHTERS

But Here We Are

Brilliant return, tinged with heartbreak.

Taylor Hawkins' sudden death last year was a truly tragic moment in Foo Fighters' 28-year history. For the second time, Dave Grohl was left to mourn a larger-than-life bandmate, and in this case a best friend too. Hawkins' positive personality shone a huge ray of sunshine over the band and delivered some of their finest moments, whether that was fronting Queen's *Tie Your Mother Down* with Brian May and Roger Taylor at Hyde Park in 2006, or singing Led Zep's *Rock And Roll* with Jimmy Page and John Paul Jones at Wembley in 2008.

So when he was cruelly taken away in Bogotá, Colombia, in March 2022, Foo Fighters were well within their rights to call it a day there and then, such was the pain and loss of a truly vital member of the band. But just as he did after the tragic death of Kurt Cobain in 1994, Grohl bravely soldiered on, honouring Hawkins with two guest-heavy tribute shows in London and LA, and at the end of last year eventually confirming that the band would go on without him.

With 'But Here We Are', Grohl spends the bulk of Foo Fighters' eleventh studio album battling to come to terms with Taylor's death. Opener *Rescued* comes roaring out of the blocks as a stunned Grohl screams: *'It came in a flash, it came out of nowhere/ It happened so fast, and then it was over'*, before hopelessly admitting: *'I'm just waiting to be rescued, bring me back to life'.*

This is followed by the brilliant *Under You*, a song which sees the Foos revert back to the raw emotive sonics that painted 'The Colour And The Shape' belter *Monkey Wrench*. It also delivers one of the most gut-punching lines on the album as Grohl pictures 'sharing songs and cigarettes' with his late bandmate before adding: '*This is how I'll always picture you.'*

Elsewhere, the frenetic title track is on a par with stadium-slaying anthems like *Best Of You* and *Times Like These* as rousing guitars give way to thunderous drums while Grohl goes full-throated on the vocal front. *The Teacher*, meanwhile, sees him laying bare his darkest moments as he tries to come to terms with the fact that he's been shown 'how to breathe' but never 'how to say goodbye'. He then, finally, reluctantly accepts Hawkins's passing, on soothing closer *Rest*.

STUART JONES

As albums go, 'But Here We Are' might be the Foos' most cathartic, but it's also one of their best, and a fitting tribute to the late great Taylor Hawkins.

Damian Jones

NOEL GALLAGHER'S HIGH FLYING BIRDS

Council Skies

Ex-Oasis chief returns to his musical roots.

While the Gallagher brothers continue to squabble over the potential second coming of Oasis, Noel Gallagher and his High Flying Birds have quietly crept back with their first album in six years.

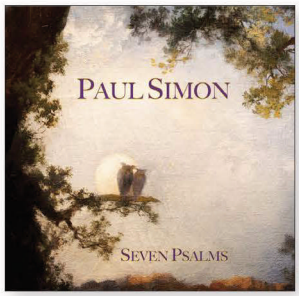
'Council Skies' finds Gallagher senior moving away from the electro-psychedelic sonics that dominated his last album, shifting back to his more traditional, anthemic songwriting. Not that this is necessarily a bad thing. Knocking out a tune for the masses was something the ex-Oasis mastermind was always very good at, and he doesn't disappoint as he smatters the bulk of this new record with sweeping orchestral strings. The pick of the tracks here are the pulsating *Pretty Boy*, the string-laden *I'm Not Giving Up Tonight* and the soaring *Open The Door, See What You Find.* If this is likely to be Noel's last album for a while, then it's a pretty solid swan song.

Now about that Oasis reunion… **Damian Jones**

PAUL SIMON

Seven Psalms

Autumnal meditations from a master craftsman.



Despite embracing semi-retirement in recent years, a restless master craftsman like Paul Simon was never going to fade away quietly.

An exploratory chamber-folk suite of seven poetic ruminations on religious faith and looming mortality, all flowing together and linked by recurring motifs, 'Seven Psalms' continues Simon's fruitfully experimental late-career phase. The ambient acoustic arrangements are exquisite, his vocals grainy and intimate, harmonising gorgeously with his wife Edie Brickell in places.

First coming to Simon in a vivid dream in 2019, the project then developed into "an argument with myself" about spirituality and the dubious promise of an afterlife: 'Two billion heartbeats and out/Or does it all begin again?' Like Nick Cave's recent work, these mystical meditations sound like free-form prayers to an elusive, possibly non-existent God.

The music is mostly luminous and spellbinding, but the slender 33-minutes is disappointing, a mini-album when such huge cosmic themes deserve deeper, broader consideration.

Steven Dalton

SPARKS *The Girl Is Crying In Her Latte*

Late resurgence cemented, with a return to their former UK label.

For a duo with a combined age topping 150, Ron and Russell Mael have pulled off a dazzling sustained career renaissance in recent years. After a run of top 10 albums, Edgar Wright's all-star bio-documentary 'The Sparks Brothers' (2021), Leo Carax's prize-winning collaborative musical 'Annette' (2021) and more, the veteran LA avant-glam brothers have become their own greatest creations, a deliciously surreal living artwork. To quote Todd Rundgren, who produced their 1971 debut and worked with them again recently: "There is some comfort in the fact that something this weird can survive that long."

With appealing symmetry, the Maels have returned to Island Records almost 50 years since the label launched their mainstream pop career. As determinedly quirky as its title, 'The Girl is Crying In Her Latte' is a very strong collection of vintage Sparks moods, plus a few new left-field twists. Arch, ironic, culturally-rich lyrics underpin heavily mannered staccato vocals and punchy mini-opera melodies, from sarcastic new-wave blammers like *Nothing Is As Good As They Say It Is* to the waspish Morrissey-on-Broadway power ballad *When You Leave*.

Fans of the duo's classic 1970s baroque-pop phase will appreciate orchestral bangers like *We Go Dancing*, a droll totalitarian disco stomper that re-imagines a North Korean military parade as a giant rave, and *Take Me For A Ride*, a galloping Bonnie And Clyde fantasy chase drama couched in lush Hollywood-sized string arrangements. Blurring the line between sunny and sinister, both have some of the sugar-coated oddness of Danny Elfman's scores for filmmaker Tim Burton.

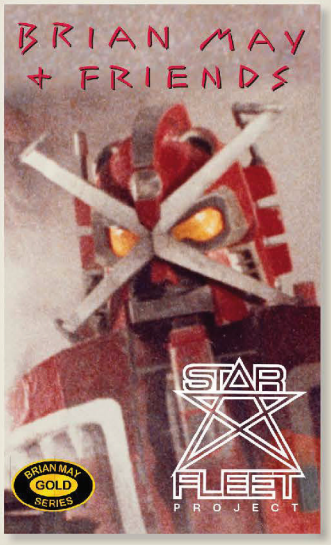
Long before Talking Heads, before Yello, before Pet Shop Boys, Sparks invented post-modern meta-pop almost single-handedly. But, crucially, behind their theatrical artifice and ironic distance lies a tender, yearning, nostalgia-infused romanticism. The luminous, Kraftwerkian electro reverie *Escalator* is one of their most unashamedly beautiful songs to date, the bittersweet relationship post-mortem *Gee, That Was Fun* strikes a wistfully Beatles-ish tone, and the rousingly emotional soft-rock anthem *It Doesn't Have to Be That Way* sounds almost like a defiant manifesto for the Maels as pop's eternal outsider artists. *'They always said you must stay inside the lines/Staying easily defined or you're wasting all your time/It doesn't have to be that way.'* Indeed not.

Forever fresh, witty and stubbornly original, Sparks are living proof that weirdness never gets old. *Stephen Dalton*

JAMES "MOTOR" MERRITT/PRESS

BRIAN MAY + FRIENDS *Star Fleet Project*

Queen guitarist's long-lost 1983 mini-album gets lovingly dusted down.



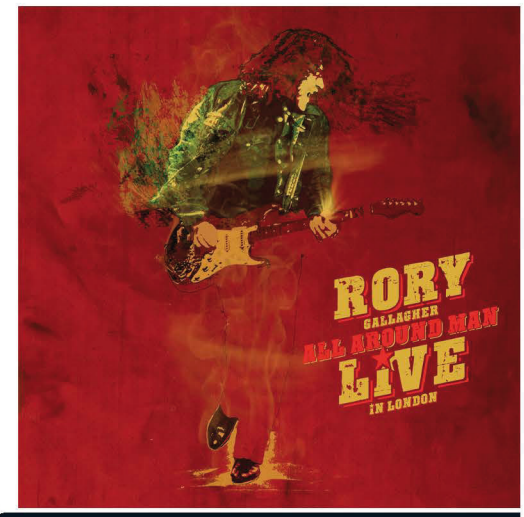
That Queen guitarist and avid astronomer Brian May looked to the stars for his first solo project was no surprise. That the resultant three-track mini-album was inspired by a Japanese kids' sci-fi TV show starring Gerry Anderson-style puppets and featured fellow guitar hero Eddie Van Halen was more of a curve ball.

Released in 1983 and credited to Brian May + Friends, the original 'Star Fleet Project' release is an overlooked curiosity in the extended Queen discography. The main song is a faithful, if elongated, eight-minute cover of the TV show's closing theme, featuring vocals from May and some impressive guitar tag-teaming from him and Van Halen. The two other tracks head off in a completely different direction: *Let Me Out* is a slow-burning blues-rock number that sails close to early Queen B-side *See What A Fool I've Been*, while *Blues Breaker (Dedicated To E.C.)* is an exhilarating 13-minute blues jam that sees these two world-famous musicians essentially prostrating themselves at the feet of Beano Album-era Eric Clapton, a mutual hero.

This lovingly curated, impressively-packed box set elevates 'Star Fleet Project' from charming oddity into a fascinating snapshot of a specific moment in time. It includes the original edited *Star Fleet* single on seven-inch, plus the full mini-album on 12-inch vinyl (and a Star Fleet pin badge for the full retro experience). But May has gone to town on the extra material, digging out a full CD's worth of out-takes from the original two-day sessions. It's the kind of candidness that Queen themselves would never sanction — it's not only possible to hear these songs taking shape, mistakes and all, there's also a tangible sense of the joy in the room that comes with two massively successful musicians stepping away from their high-pressure day jobs. There's a poignancy to it as well, given that both Eddie Van Halen and session bassist Phil Chen passed away in the past few years.

May himself would soon return to the bosom of Queen. Their records, and the solo albums he released after that band ended, would be much more high-profile than his kids' TV show theme tune cover. But as far as passion projects go, they don't get much more passionate than this.

Dave Everley



RORY GALLAGHER

All Around Man – Live In London

First release of late-period show.

When Rory Gallagher's work is celebrated — often by the great and very good of the guitar world whose respect for him knows no bounds — it often focuses on his performances as a graduate of the 60s British (and Irish) blues boom, as the teenage star of blues-rock trio Taste and a subsequent live draw under his own name in the 70s.

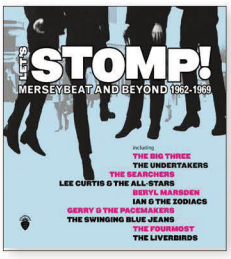
Less is heard of the music he made in the years just before his untimely death aged 47 in 1995. That situation is addressed in part by these 23 tracks taken from two nights at London's Town & Country Club (now The Forum) in December 1990.

For a man who often put emphasis on spontaneous, no-frills recordings, he put a lot of studio time into what would prove to be his last album of new material, 'Fresh Evidence', released earlier that year, and he performs most of it here. But while the self-written songs sound tidy enough, they're chugging and unremarkable compared to the handling of his blues heroes' work: his joyous take on Sonny Boy Williamson's *Don't Start Me Talkin'* crackles with passion, and his version of Muddy Waters's *I Wonder Who* is enhanced by piano and harmonica breaks to offset the main man's always-impressive soloing. Then when he returns to Muddy's back catalogue to repurpose *She's Got A Mean Disposition*, we once again feel that Gallagher is right back in his element, lost in the vintage blues that was always his first love.

Johnny Sharp

VARIOUS ARTISTS

Let's Stomp! Merseybeat And Beyond 1962-1969



Hits aside, this thoughtfully compiled three-CD set captures the excitement of an authentic youth movement honed by slog in Liverpool's Cavern and the Star-Club in Hamburg. Among the overlooked gems is a face-melting version of *Fortune Teller* by ex-Searcher Tony Jackson with The Vibrations, propelled by Kinks-style riff attack. Rory Storm, King Size Taylor and Johnny Gustafson's Big Three were all local heroes who would've gone further if they'd had the luck and songwriting chops of Epstein's boys. Even the Swinging Blue Jeans turn in an astonishing pop-psych tune.

Claudia Elliott

THE WEDDING PRESENT

Watusi

This is a romp, and a blast.

The Wedding Present's fourth studio album – and first for Island Records – was originally released in September '94, in the aftermath of Kurt Cobain's suicide, and as such was overlooked in the ensuing confusion and backlash against rock/indie-pop. A shame, as the 11 tracks here resonate with a piercing, guilt-free wit and oddly 60s garage-beat bent that serves David Gedge's Leeds outfit well. Tracks like the playful *So Long, Baby* and single *Yeah Yeah Yeah Yeah Yeah* are reminiscent of peers and influence Rob Lloyd's Nightingales as well as some of the chirpier C86 cohort (Talulah Gosh, say).

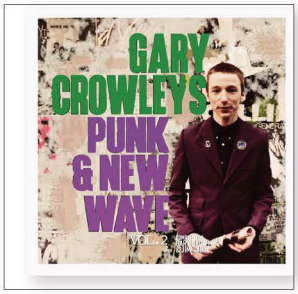
Recorded with maverick producer Steve Fisk — the man behind much early grunge as well as more experimental work — this is a slow-burning charmer of an album. *Catwoman* channels the second Velvets album, the instrumental *Hot Pants* taps a Shadows vibe, *Spangle* is pure dream-pop. Not grunge, not pure jangle by any means, but influential lo-fi.

Hot on the heels of the Weddoes' blatant exploitation of the charts — in 1992 they released a Top 40 hit every month — this album is the sound of a band hitting their stride, unafraid to experiment, and loving the consequence. **Everett True**

VARIOUS ARTISTS

Gary Crowley's Punk And New Wave Vol. 2

Second box set hits the spot



DJ Gary Crowley presents another boxed set of punk and new-wave tracks – more than 75 of them – and the results are impressive. The punk-to-post-punk era was famously fertile, with hundreds of acts releasing one single then dying, and it's this legendary three-minuteness that gives this box its momentum: acts who rise up like mayflies, deliver their best shot, and then fall back into the stream, all passion spent. And if some of them — The Limps, Liquid Stone, The Trend and many more — were never heard from again, then others collected here — The Clash, The Jam — enjoyed varying degrees of success, while some (The Cure) continue into the 21st century. It's fun to see how the more popular acts are represented by remastered tracks, while others are presented in taken-from-vinyl crackly mono. This collection does lean towards power-pop rather than experiment, but it's a brilliant excitement preservation job. Some of us are holding out for a third, maybe even a fourth, collection. **David Quantick**

JACK DE NIJS FOR ANEFO

JOHN MAYALL *Reissues*

Vinyl reissues of six LPs by Brit bluesman between 1965 and 1968.

John Mayall was a one-man school of rock for UK guitarists in the 1960s, as well as for other sidemen. Among his protégés was Eric Clapton. Fleetwood Mac bassist John McVie, for example, played on Mayall's debut album, the live 'Plays John Mayall' (7/10), released in 1965, which, while firmly rooted in the blues, felt further down the road than The Beatles in anticipating the late 60s.

'A Hard Road' (1967, 7/10) was graced by the guitar phraseology of Peter Green on the likes of *The Stumble*.

An 18-year-old Mick Taylor, later of the Rolling Stones and young master of the slide, was the next out of the academy, on 'Crusade' (7/10). Both of those albums, iterating and reiterating the blues-rock format, seemed somewhat impervious to the psychedelic eruptions raging around them that year. Still, the fine 'The Blues Alone' (1967, 8/10), on which Mayall played all of the parts himself, feels more introspective, with hints of experimentation such as use of the celesta on *Harp Man*.

Better still was 1968's 'Bare Wires (8/10)', graced by side one's *Bare Wires Suite*, an innovative piece of 'chamber blues', adorned with guitar, cornet and harpsichord. Finally on 'Blues From Laurel Canyon' (1968, 7/10), Mayall relocated thematically from the blues cellars of London to the new rock terrain of California. Things had come a long way. *David Stubbs*

The Great Escape

VIRGIL HILT'S MOTORCYCLE JUMP

1963

Steve McQueen's 'Cooler King' makes a last bid for freedom in John Sturges' 1963 WWII POW drama, The Great Escape — and boy, did his attempt live up to the title. Trapped on the German border, astride a stolen German motorbike, American pilot Virgil Hilts defies incoming Nazis by revving his engine, racing for the barbed-wire fences and hoping for a leap to freedom. Standing in the saddle and pushing the bike down a grassy hollow, the action man guns his ride over the first fence in a breathtaking stunt jump that many believed McQueen, an accomplished biker IRL, did himself.

Though McQueen had performed all of his other stunts in the movie (including playing both himself and the pursuing Nazis during the preceding chase sequence) and conceived this iconic sequence — telling Sturges that Hilts' jump (rather than a planned train escape) would "put more juice" into the narrative — he didn't make the bike jump personally. In an interview some years later, he recalled that he was a competent rider at the time of filming but he didn't feel he had the 'savvy' for the stunt, though he was certain he could have achieved it later in his career, when his stunt skills were better honed. Instead, the jump (12 feet high in take off, but landing 65 feet below) was handed to his trusty stuntman, Bud Ekins, who also doubled for him during the chase sequence in 'Bullitt' and was one of Tarantino's inspirations for Brad Pitt's stuntman character in 'Once Upon A Time… In Hollywood'.

Ekins agreed to try the stunt using a modified TT Special 650 Triumph rather than the bike Hilts would have been riding at that time and in that location, a side-valve Wehrmacht BMW.

"We had four bikes for this film. I was running a TT Special 650 Triumph," McQueen told press during the 1963 promotional tour. "We painted it olive drab and put on a luggage rack and an old seat to make it look like a wartime BMW. We couldn't use a real BMW, not at the speeds we were running, since those old babies were rigid-frame jobs, and couldn't take the punishment."

Ekins and Tim Gibbes (an Australian moto-cross champion) designed the stunt using a fence a few feet high and digging out a 10-foot ramp. When Ekins cleared that, they raised the fence to eight feet and lowered the ramp.

In third gear at 50mph, Ekins made the jump.

"Then I hit the ramp at 60mph in fourth and jumped 12 feet high and 65 feet down," he recalled. "I said to Sturges: 'Okay, let's do it!'"

"When I took off, I throttled right back and it was silent," Ekins remembers of the single-take moment. "You know, everything was just silent – the whole crew and everything was just silent. And then when I landed they cheered like crazy. They did just one take and afterwards the assistant director came to me and said, 'Well, that's a $1000 jump if I ever saw one.' I knew nothing about negotiating fees so I said, 'Okay,' and that was that. Two days' work, one jump, and we were finished."

Though the jump immortalised on celluloid is Ekins, McQueen did make the leap after Sturges called 'cut'. According to co-star John Leyton, the daredevil lead, along with castmates James Coburn and Charles Bronson, then all had a crack at the stunt using Ekins' launch ramp. They all made it.

JANE CROWTHER

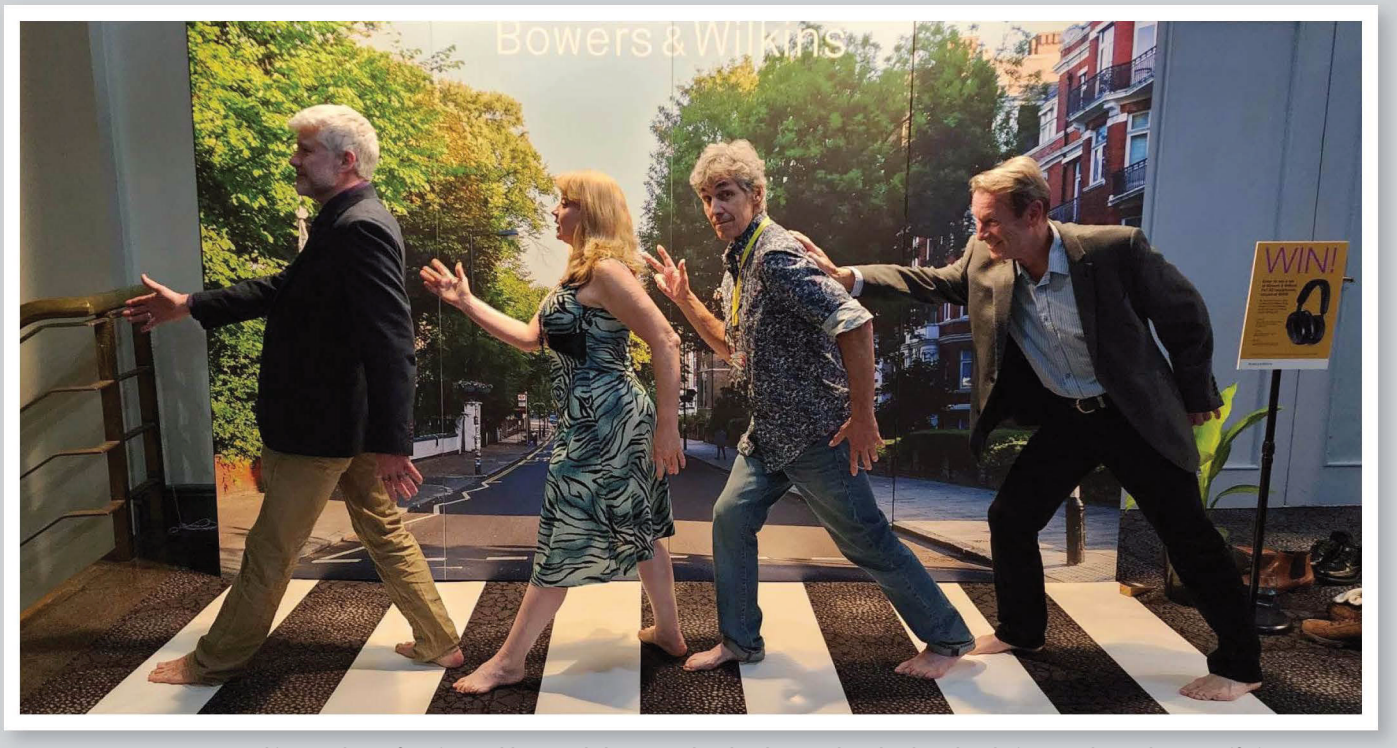
THE AUSTRALIAN HI-FI SHOW 2023

SHOW REPORT

The first hi-fi show in Sydney since the pandemic stopped the planned HIFI2020, the **Australian Hi-Fi Show 2023** opened its doors on Friday 28th April, running through to the Sunday afternoon, with exhibits across four floors of the Novotel Sydney Central just a stroll down the tramway from Central Station.

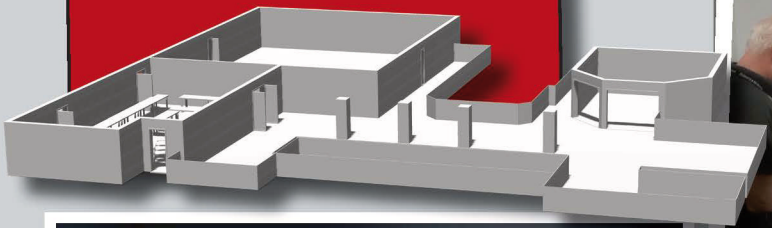
Delivering any hi-fi show is a challenge, and hotel rooms can be variable in their ability to deliver hi-fi at its best. So what impressed us the most was the quality of sound to be heard. At most shows we leave thinking of the four or five rooms that were sounding superb. At this show we could barely point to two or three that *weren't* sounding superb, so our congrats to the exhibitors for terrific work in getting those rooms to sing. There was a general atmosphere of fun, supplemented by our presentation of the Sound+Image Awards on the Saturday night, and the promised weekend downpour proved less dampening than expected, allowing showgoers to benefit from the superb selection of restaurants and cafés in Haymarket and beyond. The hotel's own all-day every-day $7 beers didn't go amiss either.

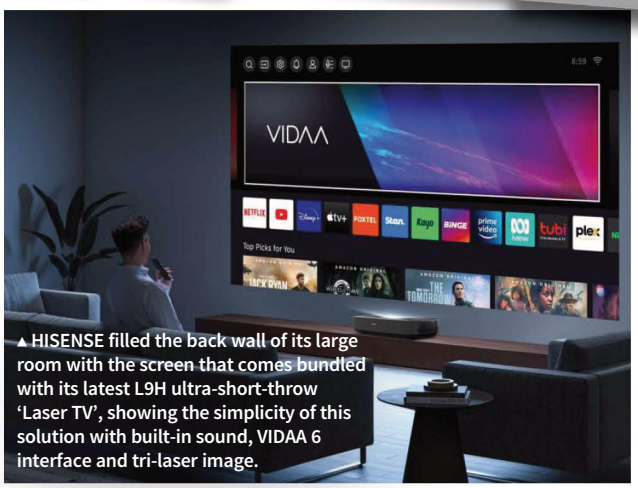
Here's our nearly-complete Show Report, gathered mainly on a relatively restful Sunday that allowed us extended stays in most rooms, enjoying the magnificent tunes on offer. Congrats to all involved!



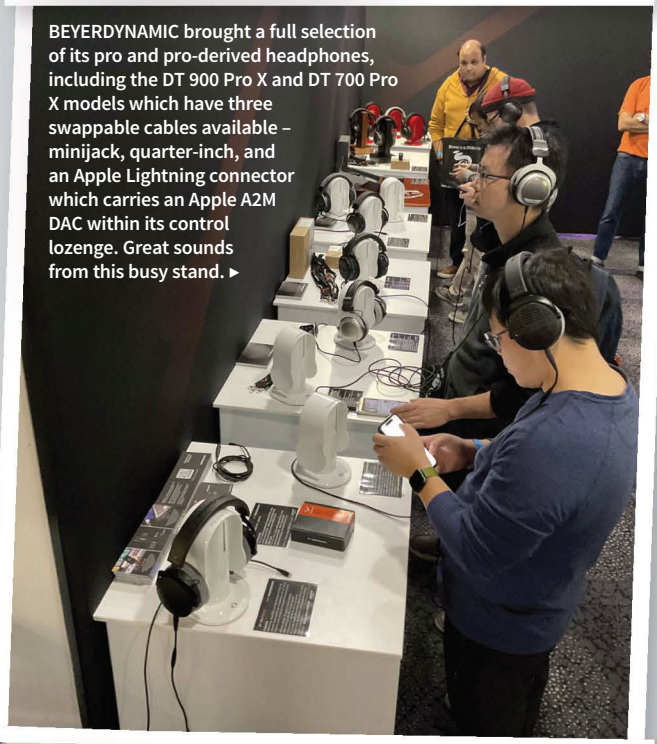
▲ RICHTER ON THE ROAD: making good use of Masimo's Abbey Road photo mural at the Show are here loudspeaker designer and Sound+Image Lifetime Achievement winner Dr Martin Gosnell (left) with musician and former Seltic Siren Shannon Bacall, a second speaker designer and Sound+Image Lifetime Achievement winner Brad Serhan, and Richter's Brian Rodgers. All went bare-foot, technically an inaccurate recreation unless they all wanted to be Paul...

ENTRY + LEVEL 1

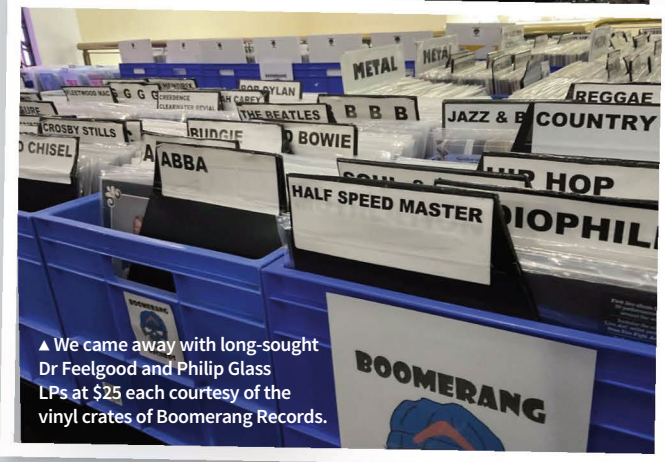




▲ HISENSE filled the back wall of its large room with the screen that comes bundled with its latest L9H ultra-short-throw 'Laser TV', showing the simplicity of this solution with built-in sound, VIDAA 6 interface and tri-laser image.



BEYERDYNAMIC brought a full selection of its pro and pro-derived headphones, including the DT 900 Pro X and DT 700 Pro X models which have three swappable cables available – minijack, quarter-inch, and an Apple Lightning connector which carries an Apple A2M DAC within its control lozenge. Great sounds from this busy stand. ▸



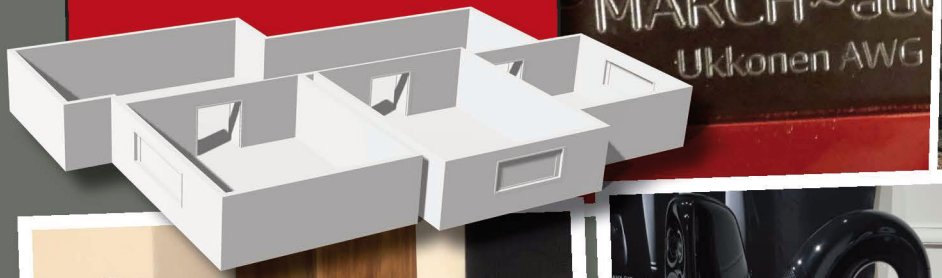
▲ We came away with long-sought Dr Feelgood and Philip Glass LPs at $25 each courtesy of the vinyl crates of Boomerang Records.

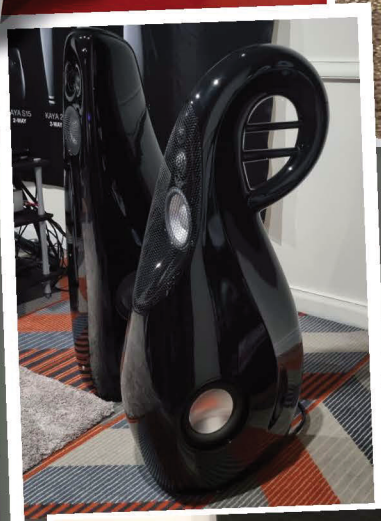
▲ The massed brands of Sound United had their first outing under new name Masimo Consumer, cunningly fitting two demos in their Level 1 room: Marantz's latest amps driving Bowers & Wilkins 700 Series and Formation speakers (above), the other with Denon driving Polk. The latter system was 'red-carded' for playing 'Hotel California', but the charge was later dropped on confirmation this was a visitor request.

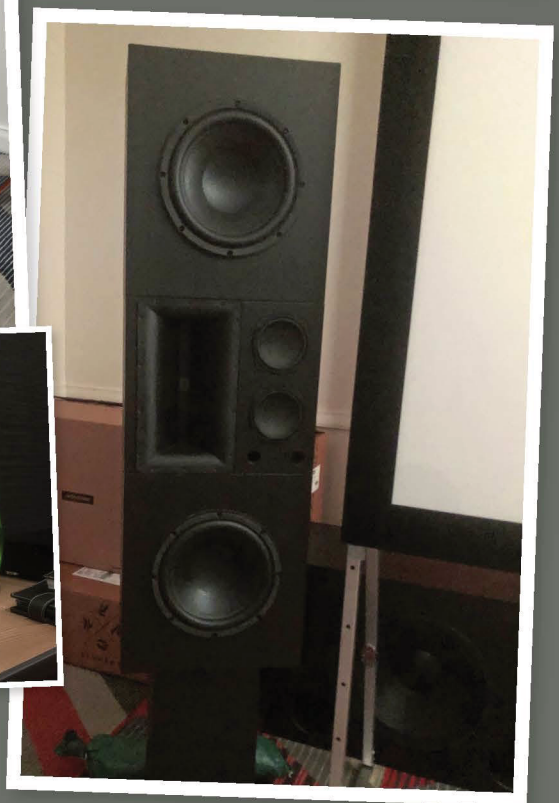
▲ Masimo also took a room on Level 9 to give a full demo space for the Bowers & Wilkins 800 Series, with Classé amplification, and we've never heard them sounding better. We also loved the B&W photo murals erected by Masimo for 'Insta' snaps; the desk at Abbey Road is shown below with our Editor invoking some virtual reverb, while the road mural is shown opposite with excessively barefooted hi-fi luminaries.

▲ When the public vote for Best Sounding Room was counted, it was no huge surprise to find the KYRON and HALCRO room topping the poll. With both streaming sources and vinyl-spinning courtesy of Mark Dohmann's Helix One Mk3 turntable (right), the four Halcro amps were able to deliver unfaultable performance from Kyron's Kronos system with Mercury subwoofers.

GROUND FLOOR







▲ Kyron was run amazingly close in the public vote for 'Best Room Sound' by another Australian company, MARCH AUDIO, from Albany, WA. It was the first outing for the Ukkonen AWG floor-standers, to be priced at $9000, along with the award-winning Soiutuva WG, both driven by March's own Eigentakt P421 amps. It was clearly one of the best-value demonstrations at the Show.

Also in a big Ground Floor suite was Avation with South Africa's thrillingly-curvy VIVID AUDIO speakers, including an early showing of the $10k little KAYA S12 bookshelf models, in bright green. ►

And in perhaps the biggest, certainly the loudest, demonstration of the Show, ELEMENTI had a full and massive home cinema room with its huge Elementi Air Tempest speakers flanking a freestanding screen, with four subwoofers and a Christie projector: the sound was HUGE! ►►

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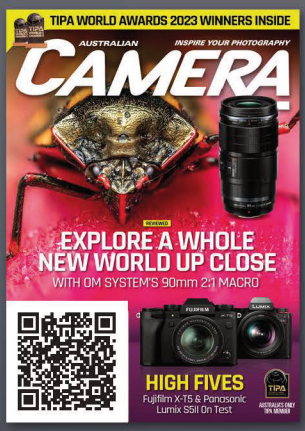

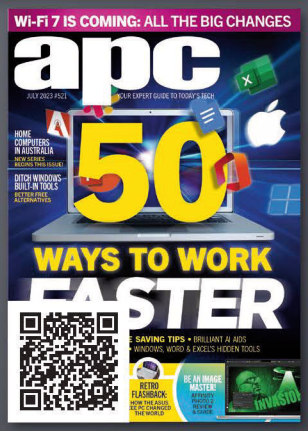

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FUTURE

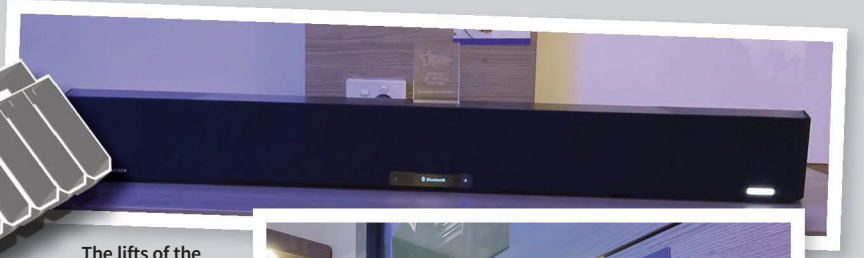
THE AUSTRALIAN HI-FI SHOW 2023
SHOW REPORT

LOWER GROUND

▲ The Lower Ground took a while for some visitors to find, but once in the catacombs they were treated to two systems running PERREAUX power from New Zealand, with the company's Paul Sammes on hand to roll forth information to supplement the fine-sounding tunes. A bright yellow award-winning Perreaux 200iX ran AMPHION standmounts, while the Finnish speaker brand's larger reference Krypton3X (with twin papyrus cardioid midrange drivers and hidden 10-incher) got the benefit of the Perreaux 300iX and tunes spinning on HOLBO's Airbearing turntable system, another award-winner.

Also on dem, a cool high-end active standmount with built-in room correction, the c8 from DUTCH & DUTCH (who are, lest you were wondering, Dutch).

LEVEL 9

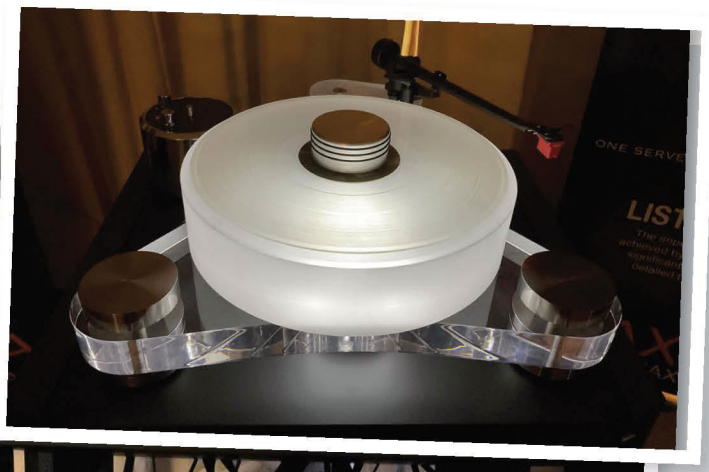


The lifts of the Novotel Sydney Central were in constant use all weekend, ferrying Show visitors up to the ninth floor, where a full storey of the hotel's main tower was packed with room after room of top audio offerings. SENNHEISER took two spaces, one to demonstrate both the new Ambeo Plus soundbar with sub, and the magnificent double-award-winning Ambeo Max (pictured above ▲) playing music, only through Bluetooth, yet still smashing out a great spacious take of Kate Bush's *Waking The Witch.* Next door a healthy set of head-phones were ready for audition, including the latest HD660 S2 open home headphones. ►

◄ Across the corridor YAMAHA was conducting booked demo sessions of its new orthodynamic headphones, the Sound+Image award-winning YH-5000SE, but also brought a special surprise in only the second public outing (the first having been at Axpona in the US) of the HA-L7A headphone amplifier, which will launch nearer the end of the 2023. This was on demonstration in pre-production form – hand-brought from Japan by visitors from Yamaha head office, in fact, before it soon wings its way over to Munich for the High End Show. The L7A is a built-from-the-ground-up design, we gather, with its distinct look owing to the isolated placement of two toroidal transformers (powering the preamp and power amp stages) away from the rest of the electronics, although it is a single continuous chassis, not a two-box system. This very special-sounding pairing consolidated our high regard for the 5000SE.

LEVEL 9

The first of two Synergy ▸ rooms focused on the CAMBRIDGE and ELAC brands. The ELAC Vela FS 409 floorstanders beamed out with their JET 5 tweeters and Crystal AS-XR cones in a lovely gloss walnut cabinet, and enjoying a couple of speaker-level-connected REL S5/10 subwoofers in support. The Cambridge NQ streaming preamplifier and W stereo power amp brought the source and power requirements in one purposeful pair.



▲ Two MAXMEDIA rooms on Level 9 were packed with desirable pieces – most prominenently the orange horns of the AVANTE GARDE Uno SD speakers, now with a single bass driver and in black gloss cabinets as a stock option rather than a special order. The Schue Analogue limited edition Diamond Maxi turntable was atop the stack but we heard digital tunes benefitting from COS Engineering's D10 V2, a sexy little unit that does a great deal — analogue phono stage and preamp, plus digital streamer, preamp and DAC, even a headphone amp too: base price is $8500, plus $1750 each for streaming or phono modules.

▼ The second room ran Piega 301 standmount speakers with the well-regarded LAB 12 Integre4 integrated amplifier – 65 watts and two KT-150 valves per channel. 'Do Not Touch!' read a sign on the LAB 12, 'HOT!' As was the sound.

◂ We never got to hear Synergy's second room on Level 9 – combining glowing MCINTOSH electronics with luxurious SONUS FABER speakers – we couldn't get into the room all weekend, it was that popular, and continuously busy.

That kit in full: the MCD12000 DAC, two-box C12000 preamp and twin MC451 power amps, plus Sonus faber's Serafinos, fed by the Aurender N20 server and McIntosh MT10 turntable.

◂ A kit-packed rack in Audio Magic's 9th floor demonstration was using the LUMIN U2 streaming transport when we visited, alongside the AQUA La Scala MkII Optologic DAC, into Copland's CTA407 valve integrated amplifier, and fine sounds emerging via the interesting isobaric and fixed boundary bass-reflex KUDOS AUDIO Titan T606 speakers with their unusual side profile (right).

Also in the room was VPI's Prime Scout 21 turntable, and also Harbeth SuperHL5+ HD speakers. But the digital source and Kudos speakers were clearly enough for us; this was the only room this year that made our sensitive Editor actually cry. ▸

▸ OAD (Open Audio Designs)'s Gem open-baffle speakers may have delivered a visual jolt to show goers, shining red in their dipole glory, but they sounded mighty sweet and open under the control of OAD's Padma preamplifier and Vajra power amplifier.

The Gem has a full-range driver up top and a 15-inch woofer; it can be bought complete or DIY-built, flatpacked to ship worldwide, available in a range of colours at $6200 and in an American oak veneer for $7200. The Padma preamp is a fully analogue dual-mono design with three balanced and six unbalanced inputs, OAD saying it has reduced the already excellent noise levels of its previous CP1 by a further 30%. The Vajra, meanwhile, delivers 180W per channel into 8 ohms and 360W per channel into 4 ohms, operating in Class A for the first 15W.

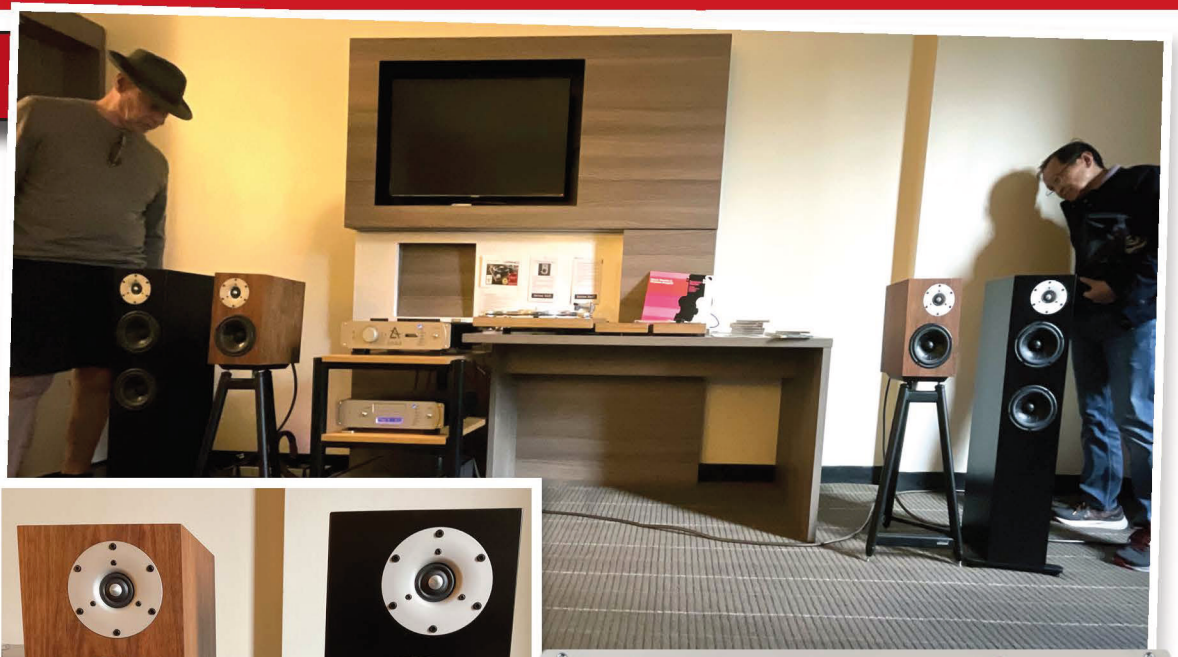
Also shown were the Rigpa open baffle speakers with 15-inch woofers (below), which looked so happy we shoved them directly into our preferred AI art engine and made some variants (right).

OAD Rigpa open-baffle speakers

Picasso kitties: Stable Diffusion 1.5

Happy aliens: Stable Diffusion 1.5

LEVEL 9



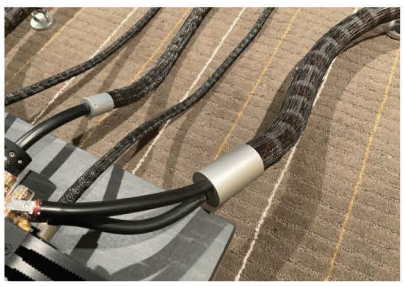
SERHAN-SWIFT'S room ▸ gathered great praise among showgoers for the impeccable performance of the very latest iteration of the company's standmount Mμ2 MkII, playing alongside a prototype floorstander and enjoying Welsh power, no less, from LEEMA ACOUSTICS' Tucana II Anniversary edition. Brad Serhan chatted quietly to visitors while trying fruitlessly to beat Morris Swift to the music selections, while Mr Swift was also demoing a prototype desktop system using a Chromebook and DAC. This was one of the few rooms presented 'sideways', apparently a good choice, as our notes here say simply "flawless".

By Sunday, RICHTER was celebrating designer Martin Gosnell's Sound+Image Lifetime Achievement Award while making some fine sounds up on the 9th floor from the new Excalibur S6SE and the Wizard S6SE, both in the new Special Edition Black, with gloss-black cabinets but matte-black baffles. And we have never heard a pair of Wizards sounding better. A Bluesound Node streamed tunes, with Musical Fidelity's M6si on amplification duties. ▸

◂ Hi End Audio Sydney left its north-west Sydney showroom to bring its exclusive brands to Level 9. There were MAGICO A3 floorstanders in there (the outside pair pictured), but we settled in for a truly lovely listen enjoying the STENHEIM Alumine Threes from Switzerland, with their aluminium cabinets and distinctive red waveguide around the neodymium tweeter. Hi End Audio's Rick Stepanov was on hand to extol the merits of the equipment, which included the award-winning BOULDER 866 DAC/amplifier as well as amps from DARTZEEL and VITUS, streamers and DACs from EMM LABS and SILENT ANGEL, as well as one of this year's Sound+Image winners, MERGING TECHNOLOGIES' NADAC. With cryogenically-treated interconnects, cables and power distribution from VYDA in Italy, this was a room that delivered fantastically large, solid and real-sounding music without enlisting components in the tens of thousands of dollars.

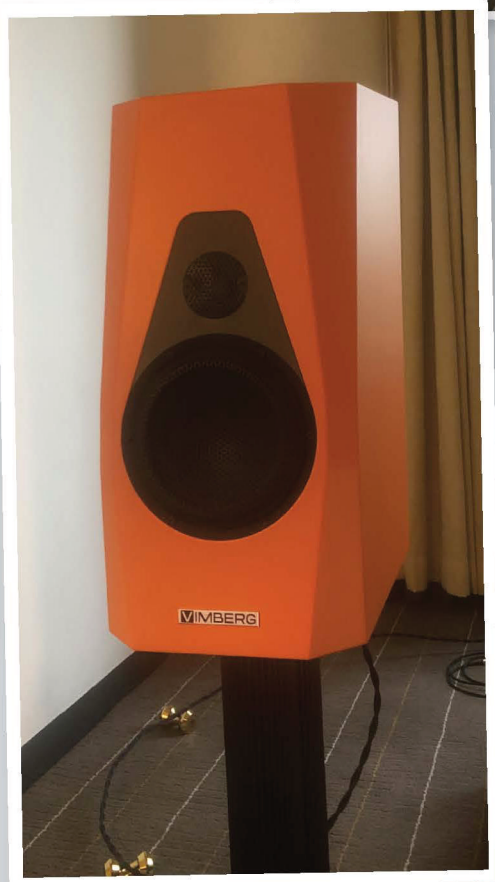
If there was a battle for bling, then ▸ BERTRAND AUDIO's room won it easily, though the sounds were at least equally impressing the visitors, especially reel-to-reel tunes courtesy of a refurbished CROWN Reel model (CX 822, price today $12k), with a CANARY AUDIO C1300 valve preamp from Canada (below centre) feeding the massive T1610 tubes of a KR AUDIO Kronzilla VA-680 from the Czech Republic, and thence to a custom pair of horn AER Loudspeakers from Germany, in shiny plexiglass, using the company's BD3B driver from Germany, a single full-range driver delivering down to 90Hz at 103dB, we were informed. The golden turntable is the TRIANGLE ART Maestro, all the way from California, while the CD source was a classic Sony CDP-X7ES (below right), often noted as one of the best CD players ever made. But not for sale, we were informed with some firmness.

We were delighted to find the new French ▸ brand REVIVAL in Audio Marketing's room on Level 9 — we had reviewed (and loved and subsequently awarded) the Atalante 3 models, which seemed quite large at the time for a standmount, but which look positively dinky when in the room alongside the enormous three-way Atalante 5s (pictured), which were firmly on song for side 2 of a Mo-Fi pressing of Supertramp's 'Breakfast in America' played on Holbo's MkII Airbearing turntable making its second appearance at the show, power from Musical Fidelity's 500W M8s-500s, and swathes of inakustic cabling (below). The closing piano solo of *Child of Vision* was so magically percussively present and powerful that we stayed till the very last note.



LEVEL 9

It was great to hear NAVS ► show their prowess in two-channel audio; often they present AV at Shows. Here we enjoyed a pair of in-room WISDOM Sage Series L75 hybrid speakers; these are also available as in-wall or on-wall designs, making them versatile as well as magnificent, their 48 inches of line-source planar-magnetic driver combining with four 6-inch woofers for space and depth we noted in our notes as simply 'wow!'. Also showing were the compact GOLDENEAR BRX stand-mounts and SuperSubX with PARASOUND Hint 6 power.



▲ Germany's TIDAL AUDIO GmbH launched the VIMBERG high-end speaker brand from its Hürth design and production HQ back in 2018; on Level 9 the two brands played in impressive harmony for Grooveworks, with Tidal electronics driving vibrant Jaffa orange 'Amea' speakers, the entry point to the currently three-strong Vimberg range. A two-way design, the Amea hides a 220mm passive radiator to the rear, while displaying its 30mm Accuton Cell ceramic tweeter and 173mm Accuton ceramic midrange woofer. There's also an upgrade option at purchase or later, substituting a 30mm Accuton diamond tweeter for the standard ceramic.

▲ Decibel Hi-Fi was not only celebrating 20 years of its webstore, but also the first of its Australian-made OHM ACOUSTICS speakers (an Ohm from home, as it were). The W2000AU is omnidirectional which assists its very friendly positioning requirements; one of the speakers at the Show was even partly behind a desk wthout any audible issues. Any artwork is possible for the fabric wrap, they tell us. Also playing: Origin Live's Calypso turntable and ICON AUDIO amplification.

▼ YAMAHA had two more rooms in the right-hand spur of Level 9, and here you could hear the whole 5000 Series, fully analogue from end to end, with the 'giant and tremendous' GT-5000 turntable, C-5000/M-5000 pre/power amplifiers, and the NS-5000 Zylon-loaded loudspeakers. It was the best 5000 Series performance we've yet heard, fully on-song, getting many 'Best Sound' votes from visitors.

Apologies to the few rooms where our notes or photos have failed us, but what a top show! How about we do this all again next year?

THE AUSTRALIAN HI-FI SHOW WILL RETURN! SEE P16

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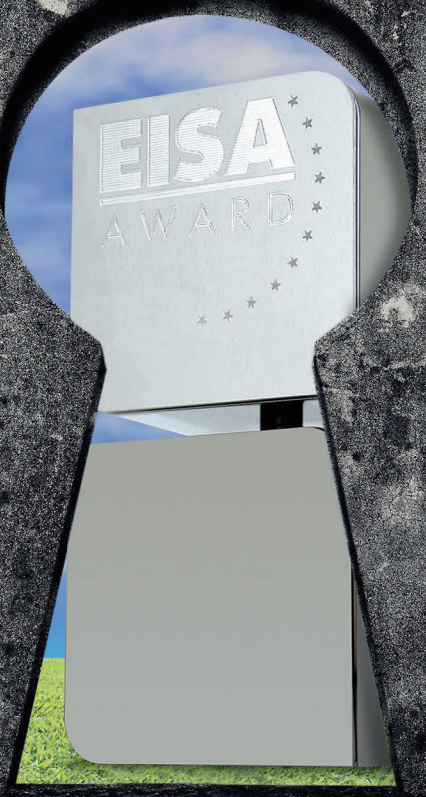

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10 REASONS

to buy at a Hi-fi Shop

Your local hi-fi shop is passionate about sound. Why risk your music with anyone else?

	The Hi-Fi Shop	The Chain Store	The Internet
1	Talk to people with years or decades of hi-fi knowledge	Talk to people with days or even weeks of hi-fi knowledge	No people
2	Receive reliable personal advice	Bit of a lottery on the advice front	No advice
3	Expect to be asked about your needs and music	Expect to be asked about your budget	No filtering questions
4	Listen in a room environment before you buy	Listen over a noisy shop floor if you can listen at all	No listening
5	Have a nice coffee	There's a coffee shop three doors down in the Mall, mate	Make your own
6	Purchase with pride	Purchase in ignorance	Purchase with fear
7	Get a full warranty with local return point	Be offered an extended warranty you probably don't need	Warranty possibly void in Australia
8	After-sales service	After-sales what?	After-sales what?
9	Have an ongoing relationship	Rarely the same staff twice	No contact with staff
10	Relax and enjoy fine music	Relax and enjoy your mass-market bargain	Purchase and pray

SOUND IMAGE *recommends*

LOCAL HI-FI SHOPS. The right place for the right sound.

WELCOME Our buying guide is based on the Sound+Image Awards presented each year. This is now fully updated with the latest winners from our 2023 Awards, announced in all their glory last issue. But we also list the best from previous awards, and also, as an EISA member, include recent EISA winners.

2023 SOUND IMAGE AWARDS

Projectors

In a dedicated or darkened room, projectors deliver bigscreen images of which even the largest TVs can only dream. There are four 'ranks' in the market — portable models of relatively low resolution, full-HD projectors, those which deliver UHD by pixel-shifting, and those with genuine native 4K resolution. Here are our current award-winners.

BENQ GV30

W2022 / $999 / www.benq.com.au

Very neat, very clever, and impressively portable, BenQ's little GV30 is an excellent way to get your bigscreen entertainment rolling.

EPSON EH-TW6250

W2023 / $2099 / www.epson.com.au

Epson's little projector comes with Android TV smarts inside and some key benefits of 4K, delivering great images at an attractive price.

BENQ TK700STi

W2022 / $2679 / www.benq.com.au

Built for big-screen gaming, this BenQ projector's smooth, bright and colourful UHD imagine is also fab for movies and TV viewing.

EPSON EH-TW7100

W2021 / $2899 / www.epson.com.au

An attractive price for a bigscreen Epson delivering the company's 3LCD colour brightness and '4K Pro UHD' imaging.

BENQ X3000i

W2023 / $3299 / www.benq.com.au

This is a smart projector with good gaming credentials but also great TV and movie performance, with Android TV smarts too.

XGIMA AURA

E2022-3 / $4199 / www.xgimi.com.au

A complete solution, with Android TV and speakers on board, this ultra-short throw delivers good optics and lumens at the price.

EPSON EH-TW9400

W2021 / $4999 / www.epson.com.au

We awarded the early wireless version (the 9400W), but this is the same projector without that connection, using Epson's '4K Pro UHD' imaging to deliver a 4K signal to the big screen.

EPSON EH-LS12000B

W2023 / $8999 / www.epson.com.au

The latest (and real UHD) version of Epson's 4K Pro UHD technology, with laser light source and versatility that yields an effortlessly smooth and cinematic bigscreen performance.

Systems & wireless speakers

All-in-one solutions: here are our award picks of portable Bluetooth speakers, home lifestyle wireless systems, also active speakers with a highly hi-fi sound along with active and/or wireless convenience. These are thoroughly modern music systems, often loaded with tech for streaming and/or multiroom operation under app control from phone and tablet.

JBL FLIP 6

E2022-3 / $169.95 / www.jbl.com.au

It's hard to go past JBL for top portable Bluetooth performance: the Flip 6 has impressive sound for the size, waterproofing too. Not hi-fi, of course, but good on the go.

JBL XTREME 3

W2022 / $399.95 / www.jbl.com.au

With a bottle opener on the strap, the outdoor nature of the Xtreme 3 seems assured. But this is no doof-doof box: we were impressed by well-proportioned stereo sound at home or away.

RUARK R2 MK4

W2023 / $899 / www.synergyaudio.com

Modern streaming options plus radio make this tabletop Ruark a powerful alternative to less attractive modern wireless speakers.

RUARK R3

W2022 / $1299 / www.synergyaudio.com

Simultaneously classic and modern in its style and abilities, Ruark's R3 proves a lovely compact system for CD, radio and streaming.

DENON CEOL N11DAB

W2022 / $1499 / www.denon.com.au

Craic agus ceol is exactly what Denon's all-in-one system delivers, loaded as it is with full streaming abilities in addition to more traditional inputs, plus CD and radio playback.

BOWERS & WILKINS FORMATION WEDGE

W2021 / $1599 / bowerswilkins.com/en-au

Despite offering zero physical inputs, the Formation Wedge is an undoubtedly premium performer in the wireless speaker space, with real visual style and luxuriously expansive sound.

KLIPSCH THE FIVES

W2022 / $1749 / www.klipsch.com.au

All the benefits of an active speaker solution along with profoundly solid sound whether from TV, computer, Buetooth or vinyl from these classic lookers.

KEF LSX II

W2023 / $2300 /au.kef.com

For our money the revised LSX II pushes well above the original, both when streaming and playing from the limited inputs. Enjoy true stereo performance that hits wireless hi-fi highs.

PSB SPEAKERS ALPHA IQ

W2023 / $2799 / ambertech.com.au

Small but surprising standmounts with both amplification within and extensive streaming/multiroom smarts available via the BluOS platform – which makes for a powerful combination.

SONUS FABER OMNIA

W2023 / $3495 / www.synergyaudio.com

Luxurious all-in-one from the Italians, with a warm and luscious sound and hidden browser-based options that can make it even better.

ELAC NAVIS ARB-51

W2022 / $3795 / www.synergyaudio.com

Simply magnificent when used as active speakers from their analogue inputs, delivering massive effortless music. Wireless operation is also available.

BOWERS & WILKINS FORMATION DUO

W2020 / $6900 / bowerswilkins.com/en-au

Entirely wireless, slightly odd-looking and not cheap, but the Duos are real active hi-fi speakers from the Formation range by one of the world's best speaker brands.

CD players

The day of the compact disc may be done, declining under the pincer movement of streaming on one side and the resurgence of vinyl on the other. Yet a flood of secondhand CDs makes this one of the cheapest ways to collect music, and CD replay delivers an assured standard of non-compressed music, magnificent with a good player through a fine system.

ROTEL CD11 TRIBUTE

W2022 / $749 / www.rotel.com.au

A great special edition of a CD player, its tuning begun by one sound guru and finished by another, then released as a 'tribute'. It's a fine way to prolong your CD listening experience.

MARK LEVINSON NO. 5101

W2022 / $9999 / www.ambertech.com.au

Impressive CD/SACD playback combines with fine DAC abilities for digital inputs and network streaming: a complete digital playback system.

DCS ROSSINI APEX

W2023 / $49,995 / advanceaudio.com.au

This high-end CD player from the UK is all set up for the new as well as the old — a full digital player, streamer and preamplifier at the

DACs

DACs can provide an upgrade for any digital source, and these days many come with a volume control so they can double as a digital-only preamp, directly driving power amps and speakers. Look for compatibility with the file types you own, along with the right set of connections that you'll need for your current – and possible future – components.

CAMBRIDGE AUDIO DACMAGIC 200M

W2022 / $1099 / www.synergyaudio.com

A half-size rocket of a performer, able to be used as a DAC, a headphone amp, or even as a preamp for a whole digital system thanks to being switchable to variable output.

MUSICAL FIDELITY MX-DAC

W2023 / $1595 / audiomarketing.com.au

Five inputs, high-quality conversion, and excellent visual feedback as well. If you want still higher quality, check out the company's $4200 M6X DAC, an EISA award-winner.

WEISS DAC502

W2022 / $17,000 / soundgallery.com.au

Spectacularly musical, invisible indeed to the music passing through, the DAC502 is both functionally-packed and one of the best DACs we've ever heard, at any price.

DACs

In-ear headphones

In-ear 'phones offer convenience of size, and the best of them can deliver beautiful music, though also crucial are ease of use and battery life, especially with true wireless buds. Bear in mind that their enclosed position makes them more dangerous to your hearing than over-ears or speakers when used at high volumes. Here are our current award-winners.

NURA NURALOOP

W2021 / $249 / www.nurasound.com

Nura's personal sound has now been bought by Denon; run-out stock will be your last chance to get a Nuraloop. But you might get a bargain!

SONY WF-1000XM4

W2022 / $294 / www.sony.com.au

Good control, comfort, ANC, and the best audio quality we've yet experienced from true wireless buds — and now dropped in price since they launched (i.e. the XM5 may be due).

SENNHEISER IE 300

W2022 / $479.95 / au.sennheiser-hearing.

The IE 300s prove Sennheiser's ability to deliver an impressively natural sound balance even from buds so small and neatly flush-fitting. Pricey, but on special for $299 as we go to press.

On/over-ear headphones

Every model listed here has won a Sound+Image award – but consider also what functions you need, as well as the prices. Open-backed models can have a thrilling airy sound that closed models can't match, while cables often beat Bluetooth for best sound. But for commuting or long distance, wireless noise-cancellers bring an isolation worth paying for.

WIRED MODELS

SENNHEISER HD 560S

W2021 / $299 / sennheiser-hearing.com

These open-backed home headphones demonstrate what Sennheiser does best — natural and high-value shining sound, a reminder of the performance headstart granted by cable rather than Bluetooth.

SENNHEISER HD 660S

W2019 / $699 / sennheiser-hearing.com

The 660S2 is now out, but at $949 you may prefer to get these $699 originals: open-backed home headphones which deliver tunes as if piped fresh from the studio, with music flowing effortlessly.

BEYERDYNAMIC AMIRON HOME

W2020 / $749 / www.beyerdynamic.com.au

Open headphones which deliver endless clarity and delight when used at home driven by a good headphone amplifier (such as beyerdynamic's own!) able to drive their 250-ohm load.

STAX SR-L500 MK2

W2022 / $1370 / audiomarketing.com.au

A relatively-affordable entry to Stax electrostatic sound, the latest version of the classic Lambda earspeakers thrill with clarity and purity. A driver is required; we reviewed them paired with the $2300 SRM-400S.

STAX SR-9000X

W2022 / $10,620 / audiomarketing.com.au

The new Stax flagship should come with a warning: once heard, there is no forgetting their impeccable electrostatic sound. A driver is required, e.g the $9000 SRM-T8000.

YAMAHA YH-5000SE

W2023 / $7499 / au.yamaha.com

The SE version comes with the stand and accessories but it's the sound that wins the award, Yamaha reviving its orthodynamic (planar magnetic) heritage to deliver a rare level of neutrality and transparency from this 5000 Series flagship headphone.

WIRELESS MODELS

JBL LIVE660NC

W2022 / $249.95 / www.jbl.com.au

Well-featured, well-built and well-tempered in tone with app EQ available to tweak your preference, nothing can match JBL's Live660NC for overear wireless ANC at this price.

AUDIO-TECHNICA ATH-M20xBT

W2023 / $169 / www.audio-technica.com.au

A-T's junior headphones bring their punchy studio sound to the street at a bargain price – no noise-cancelling here, but excellent wireless performance, even better via cable.

AUDIO-TECHNICA ATH-M50xBT2

W2022 / $379 / www.audio-technica.com.au

No noise-cancelling here, but great wireless (or cabled) performance with a solid sound worthy of the heritage behind these headphones, and selling at an attractive price.

YAMAHA YH-E700A

W2022 / $399 / au.yamaha.com

Yamaha delivers a perfectly-priced pair of wireless noise-cancellers to challenge the usual brands in this sector, with high comfort and great sound under active noise-cancellation, and with aptX adaptive Bluetooth.

SONY WH-1000XM5

W2023 / $549 / www.sony.com.au

With plenty that's new and the best stuff held over, Sony continues to deliver top-value wireless noise-cancellers. Check also the previous XM4s, lest you could save a wedge by dropping back a generation.

APPLE AIRPODS MAX

W2022 / $899 / www.apple.com/au

A magnificently low-distortion headphone creating such wide landscapes of sound that music of every kind opens up and lives every moment, reveals every detail and nails every beat; they justify the price.

Subwoofers

While many people think of subwoofers only in a home cinema context where they deliver the deepest thrills of movie soundtracks, they can be equally useful in a stereo music system, deepening the response of floorstanders as well as standmounts, and taking the load off the main speakers which can then perform to their best with the rest of the spectrum.

SVS 3000 MICRO

W2023 / $1799 / svsound.com.au

Able to get deep despite limited itself to a 10-inch cabinet, the SVS 3000 Micro is a rare small sub that performs beyond its size. Available in black, of course, but also comes in a lounge-friendly gloss white finish.

RICHTER THOR 10.6

W2019 / $1899 / www.richter.com.au

Aussie company Richter has succeeded where most have not in building a small and versatile subwoofer that doesn't sound small at all. Versatile too, with tuneable bass ports and three-mode DSP.

KRIX TEKTONIX

W2012 / $1795-$2195 / www.krix.com.au

Officially deleted but there are still some out there, Krix's 'mid-size' (11-inch cone) subwoofer is superb across either stereo-only use or multi-channel movies.

VELODYNE DB-12

HC2022 / $2299 / www.velodyne.com.au

The new-look Deep Blue 12 under Velodyne's new ownership combines a clean look with pricing that's as impressively-low as the subwoofer's clean yet deep performance levels.

KRIX VOLCANIX

HC2011 / $2395-$2995 / www.krix.com.au

Another superb Australian sub with 12-inch cone and adapted ICEPower. It works beautifully, 'sonically invisible' in large systems or with small to medium-sized standmount/bookshelf speakers.

BOWERS & WILKINS DB4S

W2021 / $2999 / bowerswilkins.com/en-au

The DB4S delivers rich, satisfying, full-bodied bass from an attractive cabinet with a single B&W Aerofoil cone, along with sophisticated app control for fine adjustment.

DYNAUDIO SUB 6

W2020 / $3699 / www.busisoft.com.au

It's not only the size of sound from Dynaudio's dual-driver compact subwoofer but also its quality that makes the Sub 6 such a marvel of low-frequency performance.

BOWERS & WILKINS DB1D

W2019 / $7900 / bowerswilkins.com/en-au

Hugely powerful — 2000W of power driving twin 12-inch cones, and accurately too, plus built-in room equalisation and the useful versatility of other settings using an iOS/Android app.

MAGICO ASUB

W2021 / $13,950 / www.absolutehiend.com

A phenomenally good-sounding high-performance subwoofer for both home cinema and stereo use, with astoundingly flexible computer-based room and speaker tuning.

PARADIGM SIGNATURE SUB 2

W2011 / $21,999 / www.audioactive.com.au

Hexagonal design using multiple radially-aligned high-excursion drivers to generate astounding bass (7Hz anyone?) — Paradigm's SUB2 delivers solid bass without limits.

FOR DIGITAL ISSUES & BACK ISSUES, HEAD TO
www.zinio.com/au/sound-image-m4307

Stereo amplifiers

Amplifiers are all about the power to drive your speakers, and different amplifiers use different technologies to do that. Also you can't just compare power ratings, because these are quoted in a myriad different ways (often overly favourably). And now amps are smart, with digital inputs and often streaming, so there's much to consider. Here are our award-winning picks.

DENON PMA-900HNE

W2023 / $1999 / denon.com.au

Denon has taken its hi-fi amplifier expertise and added HEOS streaming/multiroom to the front, surprisingly for the first time. It's a hit.

ROTEL A14MKII

W2022 / $1999 / www.rotel.com.au

No streaming here other than BLuetooth and USB-B, but Rotel delivers a classic hi-fi amp with plenty of inputs and impressive power.

CAMBRIDGE CXA81

W2021 / $2199 / www.synergyaudio.com

The Cambridge CXA81 is well-designed and equipped, while its amps drove music with the timing, separation and power of true hi-fi.

NAD C 700

W2023 / $2699 / ambertech.com.au

Enjoy the big smart display, loads of streaming options thanks to the inclusion of BluOS, and of course the power for which NAD is famed.

CAMBRIDGE EVO 150

W2022 / $4399 / www.synergyaudio.com

Smart outside and in, the Evo 150 has a modern set of inputs, along with app-controlled streaming and solid Hypex Ncore power.

YAMAHA R-N2000A

W2023 / $4999 / au.yamaha.com

This amp combines MusicCast streaming and app control with relatively purist modern circuitry inside Yamaha's timeless design.

NAD MASTERS M33

W2021 / $8999 / nadelectronics.com.au

It's quality all the way with the M33 — it has the looks, the app, the streaming, the inputs, the control, and best of all, wondrous sound.

PERREAUX 200iX

W2023 / $9495 / perreaux.com

It's not the rainbow choice of colpours which won our award: it's the sound. The 200iX is a MOSFET powerhouse, while offering versatile inputs and both remote and app-based control.

COPLAND CTA408

W2022 / $9900 / www.audiomagic.com.au

The Copland CTA408's dynamic valve sound is complemented by stand-out performance from phono input and headphone output.

ELECTROCOMPANIET ECI 6 DX MkII

W2022 / $11,945 / audiodynamics.com.au

Norway's Electrocompaniet delivers a wildly successful combination of physical inputs, streaming, control and high-current power.

MUSICAL FIDELITY M8xi

W2021 / $13,800 / audiomarketing.com.au

More power than you'll ever need, super-low distortion, a great range of inputs, plus it sounds superb... this is serious amplification.

MARK LEVINSON N^{O} 5805

W2023 / $15,999 / ambertech.com.au

The massive No 5805 has an inate ability to deliver power, authority and scale, while at the same time painting sounds with precision.

BOULDER 866

W2021 / $22,500 / www.absolutehiend.com

A unique amplifier, with a spectacularly powerful and musical performance and astounding control over bass frequencies.

MCINTOSH MA9000

W2019 / $22,995 / www.absolutehiend.com

The largest McIntosh integrated amplifier ever built, and some of the best fun you can have sitting on a couch. An investment in pleasure.

DAN D'AGOSTINO MASTER AUDIO SYSTEMS PROGRESSION INTEGRATED

W2022 / $4,985 / advanceaudio.com.au

The base price is $35,995, with useful modular DAC and phono modules to reach the full price, but it's the gloriously effortless presentation which thrills.

Pre-power amplifiers

Separating the switching pre-amplifier from the power amplification allows both sections to perform to their best without interfering with each other. It's entirely possible to mix brands, but our recommendations here are limited to branded pairs, which are a fair promise of electrical compatibility as well as an aesthetic match. Every pair here is an award winner.

MICHI P5 / S5

W2021 / $5799 (pre) + $9999 (power) / www.interdyn.com

Michi ('righteous way' in Japanese) is to Rotel as Lexus is to Toyota, a brand that delivers something above. And this pre-power combo proved simply superb. If the Michis were actual musicians, as they so often sounded to be, we would be on our feet calling for an encore.

CAMBRIDGE EDGE NQ/W

W2020 / $8999 (pre) +$7499 (power) / www.synergyaudio.com

A thrilling combination of thoroughly modern preamp (smart, app controlled, streaming) and utterly purist power amp, this pre-power pair performed magnificently far beyond its price, and is throroughly recommended.

BEL CANTO E1X DAC/CONTROL AMP & E1X STEREO AMPLIFIER

W2022 / $11,000 + $10,000 / www.absolutehiend.com

The DAC/control amp offers analogue and digital inputs including USB-B, plu app control, DLNA/UPnP network playback and a Roon end point, while the stereo power amplifier uses a pair of 400W Hypex Ncore modules to allow a compact design yet a powerful presentation from this versatile pre-power combination.

YAMAHA C-5000 / M-5000

W2020 / $12,999 + $12,999 / au.yamaha.com

Yamaha's relatively recent nourishing of its two-channel audio ranges reaches its zenith with the 5000 Series from which this powerfully musical pre-power pairing delivers what Yamaha calls 'True Sound', exceptionally transparent, dripping with the emotion of original performances across any genre.

MCINTOSH C53 / MC462

W2021 / $14,995 (pre) + $20,995 (power) / www.synergyaudio.com

An amplification pair that has no audible noise at all for low to normal listening levels, but which can also kick serious arse — because it's a McIntosh pre-power. Spending mere review time with this pair, let alone owning them, delivered absolute bliss throughout long extending listening sessions.

CLASSÉ DELTA PRE & STEREO

W2022/ $16,990 (pre) +$19,990 (power) / www.classeaudio.com

The Canadian brand was revived by building at Japan's famous Shirikawa Audio Works, devliering this attractive and well-featured preamp along with the fins and needles of the stereo power amp that delivers 2 x 250W of highly musical power into 8 ohms, 500W into 4 ohms.

GRYPHON ESSENCE PREAMPLIFIER / STEREO

W2022 / $26,995 (pre) + $34,995 (power) / www.advanceaudio.com.au

Michi ('righteous way' in Japanese) is to Rotel as Lexus is to Toyota, a brand that delivers something above. And this pre-power combo proved simply superb. If the Michis were actual musicians, as they so often sounded to be, we would be on our feet calling for an encore.

MCINTOSH C12000/MC3500 MKII

W2023 / $29,990 + $59,990 / www.synergyaudio.com

Take two separate preamplifier boxes ($29,990 the pair), add two mono power amps based on the designs that powered the PA at, er, Woodstock ($59,990 the pair) and the result is pure, simple, unadulterated music: not 'bright' or 'hard' or 'soft' or 'warm', just entirely natural. It's not a bad set of kit to look at, either.

Power amplifiers

Sometimes, if you already have a preamplifier, or indeed a DAC which can operate as a preamplifier, then you need only add the simplest of hi-fi components, the standalone power amplifier. These can be mono, stereo, or even multichannel, and their goal is simple — high power and full control to drive your speakers to their best with beautiful music.

ADCOM GFA-555se

W2023 / $2999 / ngpdistribution.com.au

Adcom has taken awards two years running, even though these are old-school power amps. They just punch so far above their weight.

ADCOM GFA-585se

W2022 / $5799 / ngpdistribution.com.au

Again, old-school circuit design doesn't hold back the massive power levels (G stands for Great, A for amplifier; you can guess the F).

HALCRO ECLIPSE MONO x 2

W2020 / $91,000 / halcro.com

Aussie Halcro makes its return with a new pinnacle of amplification, staggeringly real and a thing of beauty in every way. The price here is for a pair.

Streaming music players

A difficult category to define, since streaming now appears in all manner of product from amps and receivers to DACs and headphone amps. Here we've included award-winners that didn't slot in anywhere else! They're not just for Spotify; these streamers handle high resolution files from the internet or your network for the highest of performance.

CAMBRIDGE MXN10

E2023 / $899 / www.synergyaudio.com

Fronted by the excellent StreamMagic app, this little Cambridge streamer is a pocket rocket that can bring smarts to any existing system.

BLUESOUND NODE

E2021-2 / $999 / bluesound.com.au

Plug into an existing hi-fi to add all the abilities of Bluesound streaming and multiroom operation under the excellent BluOS app.

LUMIN U2 MINI

W2021 / $3590 / www.audiomagic.com.au

It was the U1 MINI which won our award, now updated to the U2, and with the Mini half the price of the non-'Mini' version.

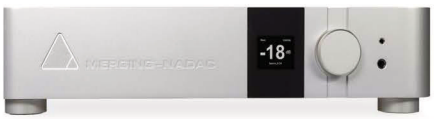
NAIM UNITI ATOM HE

W2022 / $5250 / www.busisoft.com.au

Catering to headphone lovers while doubling as a top-quality streaming preamp which excels either standalone or at the heart of a system.

MERGING +PLAYER+POWER

W2023 / $34,285 / absolutehiend.com



Reviewed with the +PLAYER name indicating its streaming abilities, and the +POWER external supply, simply the ultimate in streaming.

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Standmount loudspeakers

The ultimate sound requires the ultimate speakers — and here are those that have impressed us above all others to win our Sound+Image awards. Standmounters are not only for small spaces: they often achieve a tighter cleaner sound that some prefer to floorstanders, whatever the room. Budget for proper speaker stands if you can. For wireless speakers, see p88.

TRIANGLE BOREA BR03

W2022 / $900 / audiomarketing.com.au

Designed in France, Triangle's BR03 speakers prove impressive contenders with usefully high sensitivity to coax additional power from partnering amplifiers. Their tone is sweet and pure, with bass extension impressive for the cabinet size.

POLK RESERVE R200

W2022 / $1199 / au.polkaudio.com

The Reserve R200 set our medium listening room on fire, such that we couldn't believe the price when they told us. Substantial in size for the money, with Polk's Pinnacle tweeter and new X-Port to the rear, they relished being turned up and driven with real power.

RICHTER MERLIN S6

W2020 / $1199 / www.richter.com.au

Richter's Series 6 standmounts are better than ever — more efficient, more user-friendly, and sounding fine indeed, a tribute to the Australian design team delivering the new Richter Series 6.

CHARIO CONSTELLATION DELPHINUS

W2020 / $2749 / audiodynamics.com.au

A longstanding Italian brand, though they were new to us, and knocked out their rivals in the 2020 awards with fine and pure-sounding performance with sweet treble and impressive bass.

REVIVAL AUDIO ATALANTE 3

W2020 / $399 / www.busisoft.com.au

A new French brand's first standmount took this year's Editor's Choice award for their astounding soundstaging in combination with truth of tone. And they're pleasingly large in size.

PARADIGM FOUNDER 40B

W2023 / $4499 / audioactive.com.au

Paradigm's long-established reputation delivers in these attractive and dynamic standmounts loaded with the Canadian company's research-derived technology.

MARCH AUDIO SOINTUVA WG

W2023 / $6000 / marchaudio.com

From Albany, WA, come these solid and beautiful standmounts that leverage the latest driver tech for some thrilling results that had our listeing rooms singing with beauty yet kicking serious arse.

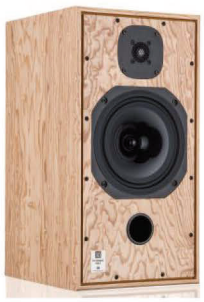
KRIX ESOTERIX ALTUM

W2018 / $7995 / www.krix.com.au

South Australia's Krix knows a thing or two about horns, and the waveguide on their stereo standmounts delivers outstanding imaging and high-end performance also giving an impressively extended bass.

HARBETH COMPACT 7ES-3 XD

W2022 / $7000 / www.audiomagic.com.au



The Harbeths look suitable classic (especially with dark grilles in place) yet their sound easily competes with modern designs, with miraculous midrange, and impressive bass for their 52cm size.

JBL L100 CLASSIC

W2019 / $8999 / ambertech.com.au

A standmounter that's too big for a bookshelf, JBL's modern reinvention of its classic L100 is a taste of the golden age of hi-fi, with the classic JBL tone and that Quadrex foam grille to nail the look.

BOWERS & WILKINS 805 D4

W2022 / $14,900 / bowerswilkins.com

With the latest D4 series the 805 standmounters finally get the reverse-wrap cabinet treatment, lifting them above their able-enough predecessors and living up to the hype despite a price hike.

YAMAHA NS-5000

W2018 / $19,999 / au.yamaha.com

Another large standmount whch summons up the classic hi-fi era in an all-new design, Yamaha's NS-5000 heralded the company's two-channel revival with fine performance.

Floorstanding loudspeakers

Floorstanders often don't take up any more space than standmount speakers on their stands, yet the extra cabinet volume and drivers can deliver more energy to the room, and more depth. At the higher prices you're not only getting state-of-the-art sound and technology, but also objects of true beauty, often bringing artisan craftsmanship to your home.

RICHTER HARLEQUIN S6

W2021 / $1999 / www.richter.com.au

The Series 6 Aussie-designed Harlequins deliver Richter's signature size and quality of sound with precision and accuracy from a stylish and usefully compact floorstander; outstanding value.

POLK SIGNATURE ELITE ES60

W2023 / $2799 / au.polk.com

We had to double-check the price-tag here, such is the value on offer from Polk's highly musical towers, a full upgrade from the previous S60, and with Polk's latest downfiring 'Power Port' technology.

DALI OBERON 9

W2022 / $3999 / www.ambertech.com.au

The newest and largest in the Oberon range at 117cm tall, the Nines (with nine-inch bass drivers) sound beautifully balanced, with well-extended bass and attractive room appeal.

PARADIGM PREMIER 800F

W2021 / $4299 / www.audioactive.com.au

Superb Canadian-built value, with the overall frequency balance just perfect, a natural sound serving all genres of music beautifully, assisted by tech including PPA lenses over both tweeter and midrange.

ELAC VELA FS 407

W2023 / $7995 / www.synergyaudio.com

Beautiful tower speakers with Elac's latest JET tweeters and 'crystal membrane' cones; it's a receipe for success with overall a wonderfully smooth and engaging sonic performance.

JBL SYNTHESIS HDI-3600

W2021 / $7999 / ambertech.com.au

Magnificent imaging and tonally integrated with great JBL bass, a smooth fluid midrange and extended highs from the compression drivers with High Definition Imaging (HDI) waveguides: wonderful speakers.

REVEL PERFORMA^{Be} F226BE

W2022 / $14,999 / ambertech.com.au

Revel's speakers (see also below) have won awards three years out of four, this latest being from its beryllium-tweetered Performa^{Be} range, with shining highs passing to dazzling midrange and solid bass delivery.

PARADIGM FOUNDER 120H

E2022/3 / $15,999 / audioactive.com.au

We've reviewed (and loved) the standmount 40B from this series, but EISA awarded the top 120H, a 5-driver 3-way floorstander with its three woofers powered by a separate DSP-controlled 1000W amp. We say 'woof'.

VIVID AUDIO KAYA 25

W2021 / $16,500 / www.avation.com.au

Standing like modern sculptures of sound, the junior floorstander of Vivid's Kaya range exploits the company's driver expertise and curved cabinets all in the service of sound, the Kaya 25s fully energising a room.

REVEL PERFORMA^{Be} F228BE

W2020 / $18,999 / ambertech.com.au

Revel's 2020 win was for another beryllium-tweetered model, the F228Be, with eight-inch drivers replacing the 6.5-inchers in the F226Be above for a work of art in both design and neutral extended performance.

BOWERS & WILKINS 804 D4

W2023 / $22,900 / bowerswilkins.com/en-au

The new 800 Series Diamond's entry-level floorstanders demonstrate how that signature Bowers & Wilkins sound has been improved still further, with more realism, greater purity – and stunning looks.

WILSON SABRINAX

W2022 / $34,995 / advanceaudio.com.au

Wilson manages to deliver its trademark sound even in this smaller model, now with more X material. Prepare to be bewitched by their realism.

Vinyl

Every model listed here has won a Sound+Image award, indicating top value at its price – but consider also what functions you need, such as a built-in phono stage, perhaps. Plan well, and the black stuff will bewitch you with its charms...

AUDIO-TECHNICA SOUND BURGER

W2023 / $429 / audiotechnica.com.au

A revamp of the 1982 original, last year in a red special edition, now in black, white and yellow: the Sound Burger is a lightweight portable battery-powered turntable, yet is no toy, playing vinyl well and respectfully! But a full deckmight be nice for home.

AUDIO-TECHNICA AT-LPW50BP

W2022 / $749 / audio-technica.com.au

With its piano-gloss finish and no-frills focus on sound (though it does have a phono stage), this is yet another A-T winner.

MUSIC HALL CLASSIC

W2023 / $999 / www.indimportscom

The exuberant Roy Hall turns to China for this high-value turntable that looks great, is easy to use, and delivers performance above its price.

CAMBRIDGE AUDIO ALVA ST

W2023 / $1299 / www.synergyaudio.com

With a built-in phono stage and the ability to play via Bluetooth, the Alva ST offers versatility as well as solid replay via the rich-sounding Audio-Technica cartridge.

MO-FI ELECTRONICS STUDIODECK+

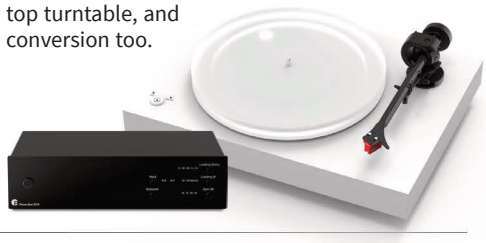
W2021 / $2799 / www.synergyaudio.com

From the vinyl curators Mo-Fi, the StudioDeck+ charmed us from its looks and build to its sonic performance. This price is without cartridge.

PRO-JECT X2 B + PHONO BOX S3 B

W2023 / $2699+$659 / projectaudio.com.au

It's not just that this turntable uses a balanced connection (and so requires this balanced phono stage), it's an outstanding MC cartridge, top turntable, and conversion too.



HOLBO MKII AIRBEARING TURNTABLE

W2023 / $12,000 / audiomarketing.com.au

Pump up the volume! An airborne platter and linear-tracking tonearm deliver effortless insight. This price is without cartridge.

YAMAHA GT-5000

W2021 / $12,999 / au.yamaha.com

Yamaha revists its hi-fi roots with the 'Giant & Tremendous' GT-5000 from its 5000 Series of stereo hi-fi. A glorious turntable.

MARK LEVINSON No. 5105

W2022 / $13,999 / ambertech.com.au

This price includes a fitted moving-coil cartridge, which delivered magic from this superbly-engineered turntable.

PHONO STAGES

HEGEL V10

W2022 / $2995 / advanceaudio.com.au

All the way from Norway, Hegel's V10 phono stage impresses with its careful attention to power supply with twin-compartment build, versatility of cartridge handing, and straightforward fabulous sonic prowess.

MUSICAL FIDELITY M6x ViNYL

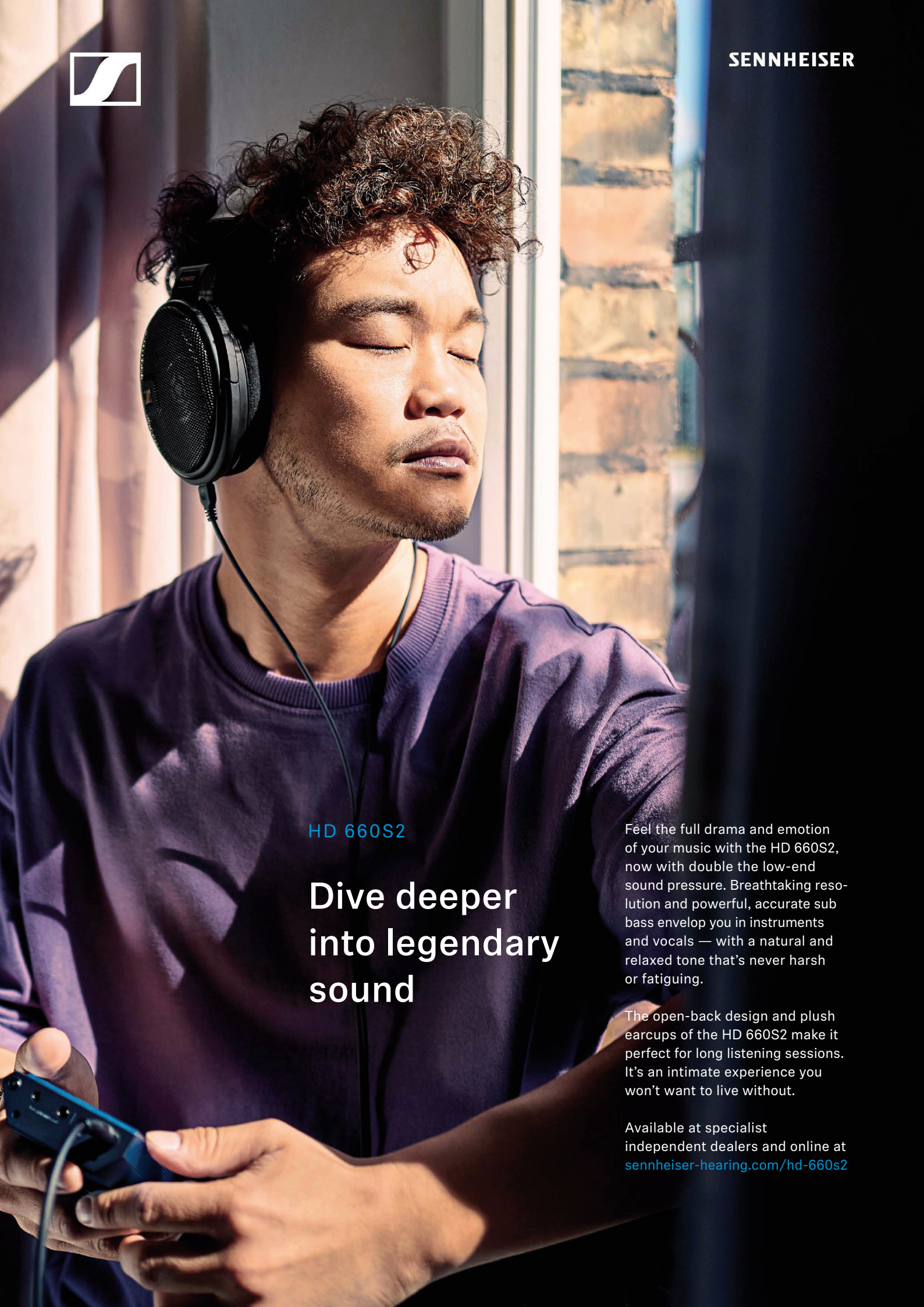
W2023 / $3675 / audiomarketing.com.au

Full-width and fully versatile – three separate inputs including a balanced option, each able to have different loadings, recalled whenever you flick the switch. Meanwhile discrete components deliver a thrilling audio experience.

GOLD NOTE PH-1000

W2022 / $18,740 / www.absolutehiend.com

Every load and gain adjustment, selectable and adjustable EQ curves for every LP ever pressed, upgradeable, but divine in its own right. Simply superb engineering – and sound.



SENNHEISER

HD 660S2

Dive deeper into legendary sound

Feel the full drama and emotion of your music with the HD 660S2, now with double the low-end sound pressure. Breathtaking resolution and powerful, accurate sub bass envelop you in instruments and vocals — with a natural and relaxed tone that's never harsh or fatiguing.

The open-back design and plush earcups of the HD 660S2 make it perfect for long listening sessions. It's an intimate experience you won't want to live without.

Available at specialist independent dealers and online at sennheiser-hearing.com/hd-660s2

AVENTAGE

SERIES 10

RX-A2A
7.2 Channels
4+1 year warranty*

RX-A4A
7.2 Channels
4+1 year warranty*

RX-A6A
9.2 Channels
4+1 year warranty*

RX-A8A
11.2 Channels
5+5 year warranty*

WINNER 2022 SOUND IMAGE AWARDS

Yamaha AVENTAGE RX-A8A
AV RECEIVER OF THE YEAR OVER $5000

*With online registration

Yamaha's award-winning AVENTAGE range has evolved. The 10th generation anniversary series has been reimagined to deliver the pinnacle of next-generation home entertainment.

YAMAHA
Make Waves